Jefferson County
Land and Water Resources Management Plan
2011 – 2020

Prepared by:
Jefferson County Land and Water Conservation Department

Land and Water Resources Management Plan – Advisory Committee

Ryan Ellifson, Department of Natural Resources
Craig Ficenec, Town and Country RC&D
Dan Heim, Department of Natural Resources
Heidi Johnson, UW-Extension
Kirsten Jurcek, Town and Country RC&D
Rob Klotz, Jefferson County Zoning Department
Joe Nehmer, Jefferson County Parks Department
Dave Nolan, citizen
Tom Novak, crop consultant, Total Crop Management, LLC
Josh Odekirk, Natural Resources Conservation Service
Bob Oleson, farmer
Dennis Presser, Department of Agriculture, Trade, and Consumer Protection
Dave Schroeder, farmer
Deb Schut, Farm Service Agency
Michelle Staff, Jefferson County Zoning Department
Tim Strobel, farmer, Rosy Lane Holsteins
Lori Van Hulle, Natural Resources Conservation Service
Suzanne Wade, UW-Extension
Dave Walz, Department of Natural Resources
Roger Zimmerman, farmer

Land and Water Conservation Committee

Mike Burow, Chair
Gregory Torres, Vice Chair
Karen Christian, Farm Service Agency Representative
Walt Christensen, Secretary
Carlton Zentner

Land and Water Conservation Department

Mark Watkins, County Conservationist
Patricia Cicero, Water Resources Management Specialist
Beth Klotz, Administrative Clerk
Gerry Kokkonen, GIS & Land Use Specialist
Nancy Lannert, Resource Conservationist
Joe Strupp, Resource Conservationist

Jefferson County Land and Water Conservation Department
320 S. Main Street
Jefferson, WI 53549
920-674-7110, fax: 920-674-7114
http://www.jeffersoncountywi.gov
lwcd@jeffersoncountywi.gov

Table of Contents

Plan Summary ……4

2006-2010 Accomplishments …….. 8

Plan Development Process and Public Participation ……. 14

Jefferson County Land and Water Resources …… 15
- Topography, 15
- Land Uses, 15
- Land Resources, 16
  - Soil Resources and Agriculture, 16
  - Combating Erosion, 17
  - Farmland Preservation Program and It's Effect on Conservation, 17
- Livestock, 18
- Wildlife Resources, 19
- Natural Areas, 19
  - Environmental Corridors, 20
- Surface Water Resources, 20
  - Exceptional Resource Waters, 20
  - Impaired Surface Waters, 20
  - Streams and Rivers, 21
  - Lakes, 26
- Wetland Resources, 30
- Groundwater Resources, 30

Goals, Objectives, Activities …… 32

Work Plan Implementation …… 40
- Working Lands Initiative, 42
- Priority Farm Strategy, 43
- Implementation Strategy for NR 151, 44

Information and Education Strategy …… 48

Monitoring and Evaluation …… 49

Partners in Management …….. 51

Appendix A – Ranking Sheet for Jefferson County Cost-Sharing, 56
Appendix B – Soils of Jefferson County, 58
Appendix C – Prime and Other Important Farmlands in Jefferson County, 61
Appendix D – Working Lands Initiative Checklist, 63

Maps, 67
Map 1. Cost-Shared Projects, 2006-2010
Map 2. 2005 Land Use Inventory
Map 3. Farmland Preservation Program, Tax Year 2008
Map 4. Environmental Corridors
Map 5. River Watersheds
Map 6. Lake Watersheds
Map 7. Lake Watersheds
Map 8. Water Resources
Map 9. Impaired and Exceptional Waters
Map 10. DNR Designated Wetlands

Plan Summary

The Jefferson County Land and Water Resource Management Plan for 2011-2020 is an update of the 2006-2010 plan. Based on an assessment of the land and water resources in the county, this report sets forth a strategic work plan for achieving goals toward protection and enhancement of those resources. The overall goal of the Land and Water Resources Management Plan is:

> Families and individuals deserve to have productive farmland, healthy natural areas, and clean water to use and enjoy. Therefore the overall goal of this plan is to restore, improve, and protect land and water resources in Jefferson County.

The Land and Water Conservation Department (LWCD) will implement the work plan through various federal, state, and local programs and funding mechanisms. It is important to note that the implementation of the work plan is dependent on receiving adequate financial resources to cover staff and the various cost-sharing programs.

The plan first details the many accomplishments from the 2006-2010 plan. Of particular note are numerous practices implemented in the last 10 years with a total of $519,252 in state funds and a total of $135,400 in county funds. These practices controlled soil erosion, protected water quality, and enhanced wildlife habitat. In addition, the LWCD is now implementing 2 new programs: the Livestock Siting Ordinance, and the Gypsy Moth Suppression Program.

The plan development process and the involvement of the public and a variety of partners is detailed in the plan. A diverse Advisory Committee was assembled to consider the resource issues and develop a work plan. Members of the Committee either attended the meeting held in December 2009 or submitted their written comments and suggestions to the LWCD. The Department of Agriculture, Trade, and Consumer Protection, the Department of Natural Resources, and the Farm Service Agency were all solicited for their input. The public was invited to become involved in the review of the work plan through a public hearing held on June 10, 2010. A Class I Public Notice was submitted to the Daily Jefferson County Union and a press release was sent to the newspapers in the county to inform the public about the hearing and the availability of the plan for review.

Information is detailed on the land and water resources in Jefferson County. With more than half of its land area in agriculture, Jefferson County has a wide array of agricultural issues. At the same time, rural development issues are increasing due to the development pressures that exist from being situated between the Madison and Milwaukee metropolitan areas. Surface water and wetland resources cover almost 20% of Jefferson County, making conservation practice implementation critical in both agricultural and developed areas. The most current data on the resources is presented

in the plan as well as some of the projects and partners involved in ongoing management activities.

The goals, objectives, and actions of the work plan are contained in a table that details timing, estimated staff resources, and estimated cost share resources. Items in bold in this work plan are priorities for the Land and Water Conservation Department. These priority activities are listed below:

- Implement the Working Lands Initiative Farmland Preservation Program to protect county resources.
- Provide technical assistance and cost-sharing so that farms attain compliance with the Agricultural Performance Standards.
- Finalize a Memorandum of Understanding with the Department of Natural Resources regarding enforcement responsibilities for the Agricultural Performance Standards.
- Ensure that manure storage facilities are built, expanded, and closed according to standards.
- Ensure that runoff is diverted away from feedlots, barnyards, and manure storage areas.
- Ensure that nutrient management plans are written and implemented to comply with standards.
- Investigate and track manure spreading complaints and work with partners to remedy any problems.
- Work with livestock operations to ensure they are compliant with Manure Management Prohibitions.
- Ensure that livestock facilities expand according to standards that protect County resources.
- Protect surface water resources and habitat quality through implementation of the Conservation Reserve Enhancement Program.
- Reduce sediment and phosphorus delivery to the Rock River through implementation of the Rock River Recovery Plan.
- Provide cost-sharing for the closure of wells to protect groundwater from pollution.
- Ensure the stabilization of shoreline erosion by providing landowners with technical assistance, and cost-sharing for practice implementation.
- Ensure decision-makers have the resource information and tools necessary to achieve protection of lakes and rivers in the county.
- Ensure that Jefferson County adopts minimum state standards for shoreland zoning.
- Assist with the implementation of the Glacial Heritage Area Plan.
- Coordinate the gypsy moth suppression program with landowners and the Department of Natural Resources.
- Ensure that non-metallic mines are restored according to standards.
- Determine progress in achieving a reduction in soil erosion on cropland through the annual transect survey.

- Document the location and trends of livestock in the country through a survey performed every 5 years.
- Determine progress in maintaining and improving the quality of lakes, rivers, and wetlands.
- Ensure the public is informed about land and water resources and the services provided by the Land & Water Conservation Department.

The Land and Water Resource Management Plan contains information on implementation, laws and ordinances involved in management, and the goals, objectives, and actions of the work plan. Components of the plan will be implemented in accordance with various state and county ordinances and regulations including: the county's Animal Waste Storage and Nutrient Management Ordinance, the county's Nonmetallic Mining Reclamation Ordinance, the county's Shoreland Zoning Ordinance, and the state's Runoff Management Administrative Code (NR 151).

A Priority Farm Strategy is used to implement the performance standards and prohibitions in State Administrative Code NR 151 in a priority driven manner. The Priority Farms include the following: farms receiving a DNR notice of discharge or notice of intent, farms with land in a water quality management area that also have livestock, farms within a water quality management area of an impaired water that is impaired due to sediment or nutrients, farms identifies as having significant manure management problems, and farms that have excessive cropland erosion.

The strategy for implementing the Farmland Preservation Program Working Lands Initiative (WLI) is included in the plan. During 2010, the LWCD will be randomly selecting 12 landowners to run through the compliance checklist for WLI. This will give staff an opportunity to fine tune the compliance evaluation process prior to official implementation of the program starting in 2011.

An implementation strategy for NR 151 is included in the plan. This strategy includes the following items:
- Implementing information and education activities to educate landowners.
- Determining compliance including a records inventory and onsite evaluations.
- Developing a compliance report to be sent to each landowner that will report their status of compliance. If they are noncompliant, then it will further explain the necessary steps to attain compliance.
- Working with landowners who voluntarily take steps to achieve compliance.
- Issuing a notification to landowners who do not take steps to achieve compliance. This notification will explain the process to attain compliance and the possible consequences of failing to comply.
- Assisting farms with attaining compliance through technical assistance, best management practices, and cost-sharing.
- Implementing any necessary enforcement actions.
- Monitoring farms to verify ongoing compliance.
- Developing an annual report of activities relating to the implementation of NR 151.

An information and education strategy that will work hand in hand with the goals, objectives, and actions of the LWCD is presented. In addition, there is a listing of all the partners of the LWCD.

Monitoring and evaluation is an integral component to the success of the Land and Water Plan and its goals. It will be an ongoing process that is implemented in a variety ways. Throughout this process, necessary adjustments will be made to how actions in the work plan are implemented to ensure achievability of the goals. Monitoring and evaluation of the land and water resources in the county will be achieved through the following: compliance tracking for NR 151, conservation practice implementation, Farmland Preservation Program Working Land Initiative farm checks, livestock inventory, manure complaint investigations, nonmetallic mine tracking, nutrient management plan implementation, transect survey, and water quality monitoring in lakes and streams. Monitoring and evaluation of the administrative side of the Jefferson County LWCD will be achieved through the following: evaluating and refining administration of programs and financial and staff resources; reviewing and refining administration of cost-share programs; coordination of activities between LWCD, Farm Service Agency, and the Natural Resources Conservation Service; annual financial audit of grant revenues and expenditures; and periodic LWCD staff meetings.

2006-2010 Accomplishments

Cost-Share Programs

Developed in 2000, the Land and Water Resource Management cost-share program has been a success in Jefferson County by helping landowners with technical and financial assistance with installing conservation practices.

In 2004, the Land and Water Conservation Department and Committee were successful in adding a Jefferson County cost-share program to the 2005 Jefferson County budget. The LWCD staff crafted a ranking system (see Appendix A) for prioritizing state and county applications which is based on compliance with state and local rules, and resource goals. Table 1 lists the cost-share funds allocated for the last 10 years.

Table 1. Funding Allocations for Cost-Share Programs

Year	State Allocation	County Allocation	Total
2000	51,020		51,020
2001	30,772		30,772
2002	47,786		47,786
2003	30,000		30,000
2004	29,400		29,400
2005	50,000	20,000	70,000
2006	30,000 15,000 – nutrient management	25,000	70,000
2007	20,000 28,000 – nutrient management	35,000	83,000
2008	20,000 84,000 – nutrient management	32,000	136,000
2009	20,400 30,000 – nutrient management	23,400	73,800
2010	20,000 12,874 – nutrient management	8,675	41,549
Totals	**519,252**	**144,075**	**663,327**

The types and amounts of conservation practices installed in Jefferson County during the last 10 years are contained in Table 2. These practices were partially funded through either the Jefferson County Cost-Share Program, or the State Land and Water Resource Management Cost-Share Program. The practices installed during 2006-2009 are depicted on Map 1.

Farmland Preservation Program

The LWCD implements the Farmland Preservation Program (FPP) by assisting landowners with development of conservation plans and performing compliance checks. As of November 2009, there are 987 landowners with 144,810 acres enrolled in the program. This covers 59% of the farmland. Jefferson County ranks 4th in the State in program participation. Each year an average of 180 farms are reviewed for compliance.

Table 2. Conservation Practices Installed in Jefferson County from 2000 through 2009

Practice	Amount Installed (2000-2009)
Access Road	432 feet
Cattle Crossing	1 (#)
Closure of Waste Storage	3 (#)
Cover Crop	48 acres
Critical Area Stabilization	7.1 acres
Diversion	3,918 feet
Feedlot Relocation	1 (#)
Filter Strip	3.4 acres
Grade Stabilization Structure	1 (#)
Grassed Waterway	7,093 feet
Heavy Use Area Protection	1 (#)
Livestock Fencing	15,058 feet
Manure Storage	2 (#)
No Till	207.8 acres
Nutrient Management	12,322.7 acres
Pest Management	1,579 acres
Roof Runoff System	790 feet
Shoreland Habitat Restoration	22,680 square feet
Streambank or Shoreline Protection	301 feet
Underground Outlet	2,361 feet
Well Closure	16 (#)
Wetland Restoration	62 (#)

Note: Figures do not include all 2009 cost-share agreements that will be installed in 2010.

Conservation Reserve Enhancement Program

The LWCD administers the State of Wisconsin's portion of the contracts for the Conservation Reserve Enhancement Program (CREP). From 2002 to 2009, over $346,000 in state funds have been paid to Jefferson County landowners. These monies are in addition to the U.S. Department of Agriculture payments to landowners.

From 2006 to present, 30 acres have been enrolled in CREP bringing the total enrolled acres as of November 2009 to 812 acres. Eligible practices include stream buffers, waterways, and wetland restorations. Table 3 indicates the environmental benefits achieved through the practices enrolled in CREP.

Table 3. Environmental Benefits of the Conservation Reserve Enhancement Program

	2006 - November 2009	Program Total All Years
Acres enrolled	30 acres	812 acres
Stream/ditchbanks buffered	5.85 miles	31.45 miles
Phosphorus prevented from entering water	677 pounds	3,953 pounds
Nitrogen prevented from entering water	354 pounds	2,135 pounds
Sediment prevented from entering water	313 tons	2,583 tons

Animal Waste Storage and Nutrient Management Ordinance

The Animal Waste Storage and Nutrient Management Ordinance was first adopted in September of 1999. In 2004, the ordinance was updated by the Jefferson County Board in order to be in compliance with changes to State standards and codes.

There have been 26 Animal Waste Storage Permits issued, and 13 Animal Waste Storage Closure Permits issued since 1999. All projects have been implemented according to applicable standards. Nutrient Management Plans that are submitted in conjunction with permit applications are also reviewed by the LWCD.

Nutrient Management Planning

In addition to the plans that are reviewed in conjunction with the storage ordinance, the LWCD reviews nutrient management plans associated with Conditional Use permits through the Zoning Department, WPDES permits through the DNR, and plans receiving county or state cost-sharing.

Nonmetallic Mines

The LWCD continues to inspect and regulate reclamation of nonmetallic mining activities at 27 sites covering nearly 500 acres. Since 2006, over 20 acres of reclamation per year has taken place, while new areas of extraction has totaled close to 10 acres per year. Several smaller sites (less than 5 acres) have been completely restored. This trend has resulted in a net decrease in exposed areas of extraction.

Agricultural Nonpoint Pollution

The LWCD works to enforce the State of Wisconsin's agricultural nonpoint pollution rules (NR 151). Most compliance is done in a cooperative manner between the LWCD and land owners. The following accomplishments have been achieved:

- 4,932.4 acres of nutrient management compliance implemented
- 3 direct discharges from feedlots abandoned or corrected
- 22 unconfined manure stacks in water quality management areas removed
- 17 spreading complaints investigated and recommendations made
- 5 complaints of unlimited access of livestock to waters of the state, 2 resolved
- 5 idle manure storage structures properly abandoned

14 complaints investigated and found not to be violations

Livestock Siting Ordinance

Jefferson County adopted a new Zoning Ordinance in May of 2006. State Administrative Rule ATCP 51 requires that all livestock siting permits follow the same process. In Jefferson County, the threshold of 150 animal units is used for the livestock siting process. The ordinance requires that farms planning to expand fill out and submit an application packet, facility maps, and worksheets to the Zoning Department. In order to properly complete the application process, a livestock producer needs to have a detailed plan as to what the expansion will entail. The LWCD is responsible for reviewing all applications, making recommendations to the Zoning Department, and inspecting any construction of animal waste storage structures. Since 2006, the LWCD has reviewed 9 applications, and 8 permits have been awarded.

Gypsy Moth Suppression Program

In 2008, the Land and Water Conservation Department coordinated a gypsy moth suppression program in conjunction with the Department of Natural Resources (DNR). A database of infestation complaints is kept. The sites are investigated and those that meet the minimum acreage requirements are surveyed for egg masses in fall. Only one site in the Town of Oakland met the minimum requirements for egg masses to warrant an aerial spray. A total of 36 acres was treated in May 2009.

Tree Seedling Sale

Every year, the LWCD holds a tree seedling sale. Approximately 800,000 trees have been sold since the program was started in the mid-1980's.

Coordination with Partners

The LWCD works cooperatively with the U.S. Department of Agriculture to ensure that landowners receive the necessary support for implementing conservation practices and management actions. Engineers with the Wisconsin Department of Agriculture and the Natural Resources Conservation Service regularly work with the LWCD and county farmers to consult and design a wide variety of conservation practices.

The LWCD routinely refers landowners to various DNR personnel including foresters, water management specialists, conservation wardens, fishery biologists, etc.

Coordination with Other County Departments

The LWCD works cooperatively with the Jefferson County Parks Department to plan and implement natural resource restorations at county parks. For instance, at Korth County Park, the following restorations have been completed: approximately 2.8 acres of shoreland habitat, and 2 acres of wetland. LWCD staff initiates and implements volunteer events for planting, weeding, and exotic species control. The LWCD staff also assists in utilizing GPS and GIS technology to document county park assets and development.

The LWCD works in conjunction with the Zoning Department on the Farmland Preservation Program, shoreland zoning issues, and review of livestock siting materials and nutrient management plans required with conditional use permit requests. In addition, the LWCD assists with the review of shoreland restoration plans and the assessment of erosion conditions as they relate to zoning rules.

LWCD staff reviews reclamation plans for mineral extraction conditional use permits for the Zoning Department. In addition, staff updates GIS data in relation to remaining parcel splits and "freeze" land under zoning-defined criteria and the county land use plan.

The LWCD has worked with Jefferson County UW-Extension in creating map publications for educational programs and public forums.

Highlights of Education Activities

March 2006 – presented at a workshop to educate landscapers in the use of environmentally beneficial techniques for shoreline protection and restoration. Attended by 15 landscapers from a four county area.

May 2006 – participated in Earth Day event at St. John's Lutheran School in Jefferson to discuss the importance of soil and erosion control with about 30 students, grades K-8.

May 2006 – sponsored and organized a Clean Boats, Clean Waters workshop to teach 24 prospective volunteers how to id aquatic invasive species & how to educate boaters on removing the species from their boats.

2006-2007 – Summer School Natural Resources Education: gave two presentations to over 100 1st through 4th graders at Luther Elementary School in Fort Atkinson.

2006-2008 – Annual Soil Stewardship Week Observance, provide education materials to more than 90 churches county-wide.

May 2007 – participated in an Environmental Awareness Day sponsored by the Lake Mills Middle School

2007-2008 – Assisted 20 Cub Scouts each year earn their Conservation Badge

April 2008 – gave a presentation at the Wisconsin Lakes Conference on "What Your Land and Water Conservation Department can do for Your Lake", attended by about 40 people

March 2009 - participated in Ag Visioning session for UW-Extension.

April 2009 - spoke to over 150 farm producers regarding LWCD programs at FSA Farm Bill meetings.

May 2009 – assisted in planning a public forum on the history, ecology, and emerging issues of Koshkonong Creek, attended by about 70 people.

June 2009 – held a workshop for 16 prospective volunteers on monitoring for aquatic invasive species.

Annually – Participated in the 4th Grade Farm Day, give presentations to over 700 4th grade students from elementary schools throughout Jefferson County.

Annually since 2006, prepared and manned LWCD conservation display at County Fair

Annually – Co-sponsor cleanup of parks adjacent to Rock Lake.

Bi-Annually – LWCD newsletter printed and sent to over 2,100 landowners
As needed – press releases on programs and projects

Plan Development Process and Public Participation

In 2009 and 2010, the Jefferson County Land and Water Conservation Department (LWCD) worked on the update of the Land and Water Resource Management Plan. The following steps were taken:

The 2006-2010 work plan was reviewed to determine accomplishments, continued needs, and activities that were implemented by other entities.

An Advisory Committee met on December 18, 2009 to review draft accomplishments and an update to the resource section of the plan. The group gave their input on the 2011-2015 work plan. Please see a list of Advisory Committee members on the 1st page of this plan.

The Department of Agriculture, Trade and Consumer Protection and the Department of Natural Resources were given a copy of the revised work plan for comment.

A first draft of the full Land and Water Resources Management Plan was provided to DATCP, DNR, and the Advisory Committee in May 2010. Comments received from them were incorporated into the plan.

A pubic hearing on the final draft Land and Water Resource Management Plan was held on Thursday, June 10, 2010 in the Jefferson County Courthouse. A Class I Public Notice on the hearing was printed by the Daily Jefferson County Union. In addition, a press release was sent to newspapers in the county to inform people about the plan, public hearing, and the availability of the plan for review.

Input received from the public, Advisory Committee, DATCP, DNR, and the Land and Water Conservation Committee were incorporated into the final plan. The Jefferson County Board of Supervisors will consider adoption of the Land and Water Resources Plan in July 2010.

Jefferson County Land and Water Resources

Jefferson County is located in south central Wisconsin. With a total of approximately 373,000 acres of land, the county consists of many land and water resources including rivers, lakes, agricultural land, and natural areas. Situated between the Madison and Milwaukee metropolitan areas, there are concerns over the increasing development pressures on Jefferson County and its resources. The population of Jefferson County for 2008 was estimated to be 80,792 by the U.S. Census Bureau.

Topography

The topography of Jefferson County is characteristic of a glaciated region. A conspicuous result of the glaciations is the large number of drumlins that occur throughout the region north of the Bark River and east of the Rock River. The drumlins in this area form a series of parallel ridges running in a general north-south direction. Throughout this region the intervening low areas consist of peat marshes. In general, the drumlins lying south of the Bark River and west of the Rock River are higher with more irregular outlines; and the intervening land usually consists of uplands.

Another pronounced topographic feature is the Kettle Moraine, which crosses the southeastern corner of the county. It covers approximately six square miles and attains an elevation of 1,040 feet in the county.

Land Uses

The different land uses in Jefferson County are detailed in Table 4. The information also is shown in Map 2.

Table 4. Jefferson County Land Uses (data from 2008 aerial photos)

Land Use	Acres	% of Total Acres
Agriculture (cropland, orchards, tree nurseries, etc.)	206,914	55.5%
Wetlands (designated by DNR)	56,277	15.1%
Urban and Roadway Corridors (developed urban land and all road right of ways)	26,614	7.1%
Upland Woods (wooded areas in both rural and urban areas, not in wetlands)	25,192	6.8%
Rural Developed (rural homesteads, farm buildings, churches, cemeteries, government facilities, etc.)	23,294	6.2 %
Surface Water	17,440	4.7%
Rural Open (rural uncultivated, vacant lots 5 or more acres, landfills)	12,024	3.2%
Commercial and Industrial (retail shops,	3,079	0.8%

manufacturing, machine shops, rail right of ways, communication facilities, utilities, etc.)		
Recreation (public parks, golf courses, gun clubs, and non-public campgrounds)	2,104	0.6%
Totals	**372,938**	**100%**

Land Resources

Soil Resources and Agriculture

Jefferson County lies on the northern edge of the Corn Belt. Most of the soils are derived from parent material that was influenced by the glacier. The most common parent materials are loess, glacial till and outwash material, and lacustrine deposits.

Many Jefferson County soils are considered prime farmland or prime if drained. Productivity of these soils is fairly high and can be sustained using proper conservation practices. The soils are mapped and defined in the Soil Survey of Jefferson County, which is available at the Land and Water Conservation Department or online at: http://www.wi.nrcs.usda.gov/technical/soil/index.html

A list of the soils in the county is included as Appendix B and a listing of U.S. Department of Agriculture prime farmland is in Appendix C. Please note that Jefferson County Zoning Department's definition of prime farmland is different than that contained in Appendix C.

According to the 2007 USDA Census of Agriculture, farming has a major economic impact on Jefferson County with over $209 million dollars in agricultural products being sold. There were 1,434 farms in the county with an average size of 170 acres. These farms cover a total of 244,238 acres. Since 1997, there has been a reduction in the number of farms and acres in farms in the county (Table 5).

Table 5. Farms in Jefferson County (USDA Census of Agriculture)

	1997	2002	2007	% Change from 1997 to 2007
Number of Farms	1,493	1,421	1,434	-4%
Average Farm Size (acres)	173	174	170	-1.7%
Farm Acreage	258,414	247,914	244,238	-5.5%

Over the years, there has been a transition in cropping systems occurring due to a decrease in the number of livestock farms in the county. This reduction has led to an increase in cash cropping systems, while reducing the number of acres planted to alfalfa and other conserving crops. This has lead to producers having to make changes in their farming methods. Producers have had to switch from conventional tillage (moldboard plowing) to the use of chisel plowing and no-till farming in order to manage soil loss to tolerable levels.

Combating Erosion

A Soil Erosion Control Plan was prepared for Jefferson County in 1988 and is available for review at the Land and Water Conservation Department. Soil erosion was estimated for each township in the county. This information is now considered out of date. In an effort to more accurately estimate soil loss, in 1999, LWCD began annually conducting the Soil Loss Transect Survey.

The Transect Survey was developed by Purdue University and estimates soil loss on a county-wide basis with an accuracy rate of over 95%. Department staff drive a designated route through the county, stopping every half mile or so to evaluate present and previous crops, type of tillage, and the slope of the field. This data is then sent to the Wisconsin Department of Agriculture for analysis.

Data gathered in the survey includes overall soil loss, evaluation of tillage systems being used, and percentage of fields planted to various crops. This information is also separated into data for each of the county's 13 watersheds. The latest survey was conducted in June of 2009 with the following conclusions:

- 84% of all fields were at or below the level of soil loss established by the USDA as tolerable
- The average county soil loss is 2.5 tons/acre/year
- 65% of the crop ground was planted to corn or soybeans
- 19% of the crop ground was planted to hay
- 50% of the crop ground was tilled using minimum tillage
- 18% of the crop ground was no-tilled

Farmland Preservation Program and It's Effect on Conservation

In the mid 1980s, the State of Wisconsin began to require that all participants in the Wisconsin Farmland Preservation Program (FPP) have and follow an approved soil and water conservation plan. FPP is a tax credit program that provides property tax relief to farmers based on a formula involving the actual property tax being paid and the landowner's income. As of July 1, 2010, there are 996 Jefferson County landowners participating in FPP. Approximately 145,478 acres are enrolled. Each of these farms has a conservation plan which details how the soil loss will be managed at or below what is considered to be tolerable. Status reviews are conducted on each farm at least once every 6 years to insure compliance with the county's soil and water conservation standard. Map 3 displays the land in the Farmland Preservation Program.

Participation in FPP has been declining over the last 21 years. Table 6 shows a comparison of FPP participation between 1988 and 2009. One factor contributing to the decline of participation is the Use Value Assessment created in 1995 with Wisconsin Act 27. This legislation changed taxation on agricultural land from market value to use value. In other words, it bases the assessment of the land on its agricultural productivity

rather than its potential for development. This has resulted in a decrease in taxes on farmland. As the Farmland Preservation tax credit is calculated based on a landowner's income and their property taxes, the amount of the credit has declined. While participation has declined, it is important to note that over 1,000 conservation plans have been developed with landowners over the past 21 years. While landowners who are no longer enrolled in FPP are not required to follow their plan, the exposure to conservation planning should have positive lingering effects.

Table 6. Jefferson County Participation in the Farmland Preservation Program

	1988	2005	2010	% Change from 1988 to 2010
FPP Participants	1,082	1,039	996	-7.9%
Acres in FPP	176,000	149,653	145,478	-17.3%

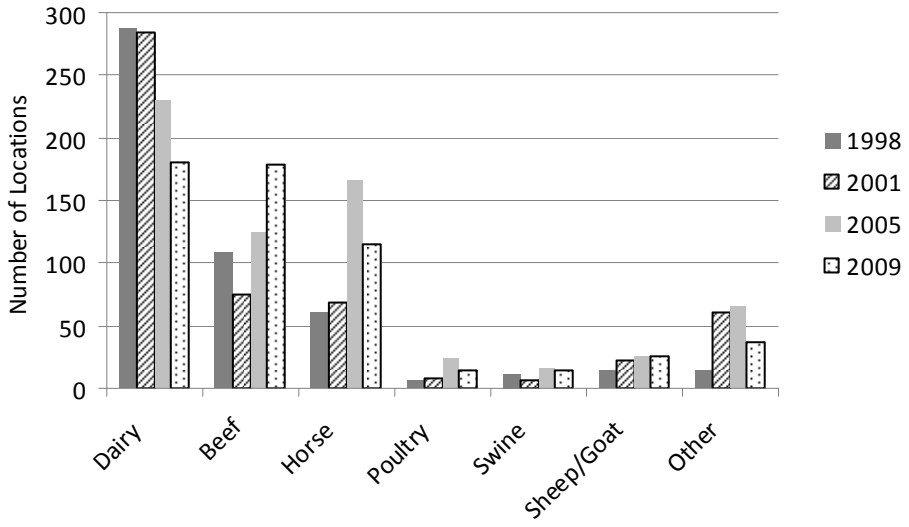
Livestock

The Land and Water Conservation Department conducts a livestock inventory every 5 years to identify the location and types of animals in the county. Locations are recorded for farms with 10 or more of dairy, beef, sheep, swine; 5 or more horses; commercial chicken operations; and any number of "other" species that could include donkey, bison, deer, goat, llama, alpaca, duck, geese, pheasant, peacock, honeybee, and fish.

The 2009 survey recorded 566 livestock locations in the county. Dairy operations comprised the majority of locations, followed by beef, horse, exotic, sheep/goat, poultry, and swine. Distribution of the livestock types was fairly consistent throughout the townships, with the exception of Palmyra and Sullivan where there seems to be a noticeable increase of horse farms.

Possible trends can be seen when comparing the data from all the livestock surveys (Chart 1). Dairy locations continue to decline in the county. It should be noted that this survey does not count the number of livestock. Beef locations have grown from a low of 75 locations in 2005 to a high of 179 locations in 2009. The horse locations seem to be clustered in the northwest corner of the Town of Palmyra and the southwest portion of the Town of Sullivan.

Chart 1. Livestock Trends in Jefferson County



Wildlife Resources

The Department of Natural Resources maintains a list, known as the Natural Heritage Inventory, of endangered, threatened, and special concern species, as well as a list of high-quality native communities. The website is http://dnr.wi.gov/org/land/er/nhi/.

The Land and Water Conservation Department administers the Wildlife Damage Abatement and Claims Program for Jefferson County. Department of Natural Resources manages the program which works to minimize wildlife damage to crops and offers partial compensation for damage caused by wild deer, bears, turkeys, and geese.

Natural Areas

Jefferson County currently has 838 acres of county parkland consisting of 16 parks, and 8.6 miles of the Glacial River Trail. Jefferson County has 182.7 miles of county snowmobile trails and 290 miles of club trails for a total of 472.7 miles. The county parks offer a variety of recreational offerings including hiking trails, cross country ski trails, fishing areas, boat launches, scenic overlooks, and picnic facilities.

Nongovernmental organizations, and federal, state, and municipal governments own and manage natural areas in Jefferson County. The acreages are as follows:

Federal = 284 acres
State = 21,114 acres
State trails = 28.5 miles
Municipal = 218 acres
Non-governmental Organizations = 443 acres

Environmental Corridors

Environmental corridors are natural areas and environmentally sensitive areas that contain floodplains, wetlands, public parks, recreation lands, conservancy lands, contiguous woodlands of greater than 10 acres, and land with a slope greater than 20%. Map 4 shows the locations of the environmental corridors in Jefferson County.

Surface Water Resources

Jefferson County consists of 13 river watersheds of which 12 drain to the Rock River (Map 5). A small portion of the Southeast corner of Jefferson County drains to the Illinois Fox watershed.

As part of the Lake Enhancement Project, maps of the lake watersheds in the county were produced (Maps 6 and 7).

Map 8 depicts the surface water resources of the county.

Exceptional Resource Waters

The entire segment of Allen Creek in Jefferson County has been designated as an Exceptional Resource Water (Map 9). Exceptional Resource Waters are defined by the State as having excellent water quality and valued fisheries but may already receive wastewater discharges. In some cases, new discharges may be allowed to correct environmental or public health problems. Please see section below on Allen Creek.

Impaired Surface Waters

The DNR lists surface waters in the state that are impaired in that they do not meet water quality standards or designated uses. Table 7 is the 2008 list of impaired waters for Jefferson County and Map 9 shows the location of the impaired waters. Once a water body is on the impaired list, the DNR is required to develop and implement the "total maximum daily load" (TMDL) process. This process includes the identification of all point and nonpoint sources of the pollutants of concern, allocation of total maximum daily discharges from all sources, and monitoring and modeling. A TMDL is currently being developed for the Rock River. Once these allocations are determined, then activities to control the pollutants can be implemented.

Table 7. Impaired Waters for Jefferson County (Source: DNR)

Water Body	Priority & Status	Category	Pollutants	Impairments
Hoopers Millpond	Low priority, 303d listed	contaminated sediment	PCBs	contaminated sediment
Johnson Creek	High priority, TMDL development	nonpoint source	sediment	degraded habitat
Lake Koshkonong	High priority, TMDL development	point source, & nonpoint source	sediment, total phosphorus	low dissolved oxygen, sediment
Maunesha River	High priority, TMDL development	point source, & nonpoint source	sediment, total phosphorus	degraded habitat, low dissolved oxygen
Rock Lake	Low priority, 303d listed	atmospheric deposition	mercury	contaminated fish tissue
Rock River	High priority, TMDL development	point source, & nonpoint source	sediment, total phosphorus	low dissolved oxygen, degraded habitat
Spring Creek	High priority, TMDL development	nonpoint source	sediment, total phosphorus	degraded habitat, elevated water temperature
Steel Brook	High priority, TMDL development	nonpoint source	sediment, total phosphorus	elevated water temperature, low dissolved oxygen
Stony Brook	High priority, TMDL development	nonpoint source	sediment	degraded habitat

Streams and Rivers

Jefferson County has numerous streams and rivers. Table 8 provides information on the major streams and rivers including biological use categories and environmental problems occurring at each river.

The Rock River Coalition trains volunteers to monitor streams throughout the Rock River watershed. The following parameters are monitored monthly: oxygen, clarity, habitat, temperature, water flow, stream biota. Currently, the streams that are being monitored include Allen Creek, 3 sites on Johnson Creek, 3 sites on the Crawfish River, and an unnamed stream that flows into Rock Lake that is adjacent to the Town of Lake Mills Miljala Shores Park. The LWCD will use the data to help make decisions on conservation priorities in the future.

Table 8. Characteristics of Streams in Jefferson County (Source: DNR, The State of the Rock River Basin, 2002)

Stream	Length (miles)	Existing Use	Potential Use	Supporting Potential Use	Use Impairment Source	Use Impairment Impact	Trend
Allen Creek[1]	8	WWSF	same	part	cl, by, nps, ce, hm, urb	hab, turb, sed, temp, do, nut, mig, flow	declining
Ashippun River[1]	0 – 31.8	WWSF	same	Part	nps, hm	hab, sed, mig	unknown
Bark River[1]	68	WWSF	same	Part-Thr	hm, psb, by, cl, urb, ce, psm, dev, nps	flow, hab, mig, turb, do, nut, sed, mac, temp, zm	stable
Battle Creek	0-2.1	WWFF	unknown	unknown	nps	hab, sed	unknown
Crawfish River[1]	49.5	WWSF		Part	hm, rf, nps	turb, sed, do, hm, hab, mig	
Deer Creek	0-2	WWSF	same	Part	hm, nps	flow, hab, turb, temp, do	stable
	2-12	LFF	same	Part			
Duck Creek	11	WWSF	same	Part-Thr	hm, nps, psm, cl, by	flow, hab, turb, do, temp, mac, nut, sed, fkill	stable
Galloway Creek[1]	5	WWFF	same	Part	hm, dev, cl, psb	flow, hab, nut, sed, do, temp	stable
Johnson Creek	17.5	WWSF	same	Part	nps, dev, urb, ce	hab, sed, nut	declining
Koshkonong Creek - Lower[1]	24	WWSF	WWSF	Part-Thr	hm, cl, psb, dev, by, psm, nps	do, hab, turb, nut, sed, temp	improving
Maunesha River[1]	32	WWSF	Same	Not	hm, nps, cl	hab, sed, nut	declining
Mud Creek	8	LFF	LFF	Part	hm, nps, cl	flow, hab, turb, sed, nut, do, temp	unknown
Oconomowoc River[1]	40	WWSF	same	Part	nps, dev, hm	nut, hab, sed	declining
Otter Creek[1]	16	WWSF	same	Part	hm, nps, cl, by	flow, hab, turb, sed, do temp, nut	stable
Rock Creek	0 – 1.5	LFF	WWSF	Part	nps	hab, sed	unknown
	1.5 – 4.9	WWSF	same				unknown

Stream	Length (miles)	Existing Use	Potential Use	Supporting Potential Use	Use Impairment Source	Use Impairment Impact	Trend
Rock River [1]	56	WWSF	same	Part	nps, hm, sb	hab, sed, nut, mig	unknown
Scuppernong River	0 – 13	WWSF	WWSF	Part	urb, hm, nps, psm, cl	hab, flow, temp, do, nut	stable
Spring Creek[1]	5	WWFF	WWFF	Not	hm, nps, psi	hab, flow, turb, temp, nut, do	stable
Steel Brook[1]	0 – 1.7	WWFF	same	Part	hm, nps, cl, psb, ce, dev	sed, turb, temp, do, hab, nut	stable
	1.7 – 6	COLD III	COLD II	Part-Thr	nps, cl	sed, turb, temp, do, hab, nut	stable
Stoney Brook[1]	15	WWSF	same	Part	nps	hab, sed	unknown
Whitewater Creek[1]	0 – 14	WWSF	same	Part	hm, cl, sb, psb, by, ce, urb, psm	flow, hab, mig, temp, turb	stable
	14 – 16	WWSF	COLD	Not	nps, urb, cl, ce	temp, turb, sed, do, flow	stable

1. Part of stream is located in another county.

Stream Table Key

Existing Use and Potential Use – indicates the biological use that the stream supports.

COLD – waters capable of supporting a community of Cold Water Fish and other aquatic life or that serve as a spawning area for Cold Water Fish species

COLD I – Cold Water Community, high-quality stream where populations are sustained by natural reproduction

COLD II – Cold Water Community, stream has some natural reproduction but may need stocking to maintain a desirable fishery

COLD III – Cold Water Community, stream has no natural reproduction and requires annual stocking of legal-size fish to provide sport fishing

LFF – Limited Forage Fishery; waters capable of supporting only a limited community of tolerant forage fish and aquatic life; waters of limited capacity due to low flow, naturally poor water quality or poor habitat

WWSF – waters are capable of supporting community of Warm Water Sport Fish or serving as a spawning area for these fish

WWFF – waters capable of supporting an abundant, diverse community of Warm Water Forage Fish and other aquatic life

Use Impairment – Source

By – barnyard or exercise lot runoff
Ce – construction site erosion
Cl – cropland erosion
Dev – intense development pressure
Hm – hydrological modification (dam, ditching, wetland drainage)
Nps – unspecified nonpoint sources
Psb – streambank pasturing
Psi – point source, industrial discharge
Psm – municipal treatment plant discharge - point
Rf – rough fish population
Sb – streambank erosion
Urb – urban storm water runoff

Use Impairment – Impact

Do – dissolved oxygen
Fkill – fish kill
Flow – stream flow fluctuations cased by unnatural conditions
Hab – habitat (in-stream sedimentation, scouring, etc.)
Mac – undesirable rooted aquatic plant (macrophyte) or algal growth
Mig- fish migration interference
Nut- nutrient enrichment
Sed – sediment embeddedness
Turb – turbidity
Temp – temperature (fluctuations or extreme high or low)
Zm - not defined in report

Trend – Based upon Best Professional Judgment, or by comparing data from past plans.

Allen Creek

The Allen Creek watershed is just over 9 square miles. Wetlands cover 14% of the watershed area. The wetlands that are adjacent to the stream help buffer it from pollution. However, sediment and nutrient loads are increasing due to historic ditching of tributaries, polluted runoff from stream bank pasturing, and steep slopes. Road salt runoff from Business Highway 26 also affects the creek. The proposed placement and construction of the Highway 12 bypass could adversely affect the water quality of the stream.

The Friends of Allen Creek Watershed (http://friendsofallencreek.org/index.shtml) formed in 2005 to understand and protect the Allen Creek Watershed, and to promote the natural communities in the basin. To this end, the FACW received a river grant from the Department of Natural Resources. The following is an excerpt of their work regarding water quality:

"Allen Creek is a high quality, cool water stream that possesses excellent physical and chemical factors important for stream biota. The combination of cool surface waters, high transparency, high dissolved oxygen, and low total dissolved solids suggest that the water flowing from upstream-to-downstream is in excellent condition and does not tend toward a decrease in photosynthesis, which is important in ecosystem function."

The least darter, a State Species of Special Concern and a Species of Greatest Conservation Need, is found in Allen Creek. Northern pike spawning habitat is found in wetlands adjacent to the stream and the Rock River.

Koshkonong Creek

Koshkonong Creek is now free flowing after the removal of the Rockdale dam in 2001. Stream bank restoration and re-vegetation projects were implemented after the dam removal to reduce sedimentation downstream. However, agricultural operations in the watershed continue to affect the water quality.

The stream is classified as a warm water sport fishery. However, bullhead and rough fish dominate the fishery. Wetlands near the mouth of the creek at Lake Koshkonong provide spawning areas for northern pike.

In 2009, the Rock River Coalition hosted a forum highlighting Koshkonong Creek. Resource professionals gave presentations on the following: stream history, wildlife, invasive species, groundwater, surface water, wetlands, and volunteer monitoring. The Friends of Cam-Rock Park were very involved in the forum.

Lakes

Jefferson County has 25 lakes that are an important resource not only for recreation, but also for plant and animal habitat. The lakes encompass 14,587 acres of water and 97 miles of shoreline. Table 9 lists some pertinent information on the lakes.

Though there are many lakes in the county, only a few of them have undergone water quality and habitat analysis. Because of their designation by the Department of Natural Resources as Long Term Trend Lakes, Lake Ripley and Rock Lake have benefited from such analyses. The other lakes in the county with more than basic data collection are those that have organized lake management districts and include Blue Spring Lake, Lake Ripley, Lower Spring Lake, and Lake Koshkonong.

Blue Spring Lake

"An Inventory of Blue Spring Lake" reports that excessive growth of aquatic plants and poor water clarity are the two most critical problems in the lake. In a typical year, approximately 1,600 tons of nuisance plants are harvested. Nuisance plants such as Eurasian water milfoil and curly-leaf pondweed crowd out other more desirable plants, resulting in a loss of biodiversity. The poor water clarity is thought to be due to re-suspended sediment rather than algal growth. This re-suspended sediment contains high concentrations of phosphorus, which perpetuates the problem of nuisance plants in the lake. Studies on Blue Spring Lake include fish and macrophyte surveys.

Cushman Pond

Due to some damage caused by the 2008 flooding, a private owner decided to remove the dam on the Bark River that had created Cushman Pond. The Department of Natural Resources assisted with the restoration of the stream banks.

Golden Lake

The Department of Natural Resources (DNR) and the Wisconsin Geological and Natural History Survey analyzed the aquatic plants in eight littoral areas in Golden Lake. Though this was not a comprehensive plant survey, the results indicate that the lake supports a diversity of plants - 21 different species of aquatic plants were identified.

In 2006, the DNR designated the northern basin of Golden Lake as a sensitive area. Sensitive areas are those that offer "critical or unique fish and wildlife habitat, including seasonal or life stage requirements, or offering water quality or erosion control benefits to the body of water" (WI Administrative Code NR 107.05 (3)(i)(1)). A total of 19 aquatic plant species were identified in this area. The sensitive area designation report states the following: "This sensitive area, with its rich ecological diversity, serves as a nutrient buffer for reducing algae blooms, a biological buffer reducing the likelihood of exotic species invasions, a physical buffer against shoreline erosion, a micro-habitat increasing biodiversity, and allows for sediment stabilization."

Table 9. Characteristics of Jefferson County Lakes.

Name	Surface Area (acres)	Max Depth (feet)	Mean Depth (feet)	Shoreline Length (miles)	Watershed Area (sq. miles)	Public Access	Lake Type
Bean Lake	33	6		0.87	1.3	T	SE
Blue Spring Lake*	141	26	7	2.7	2.0	BR	SP
Golden Lake	250	46	13	3.6	2.0	BR	SP
Goose Lake	143	4		2.24	6.0	NO	DG
Hahns Lake	88	10	2	1.83	998.3	NW	DG
Haumerson Pond	4	3		0.5	342.6	R	SE
Hoopers Millpond*	21	6		1.23	21.7	R	DG
Hope Lake	126	24	5.4	1.97	2.1	BR	SE
Kurtz Pond	4	3		0.33	0.1	NO, S	DG
Lake Koshkonong*	10,460	7	5	27.3	2,543.7	BR	DG
Lake Ripley	418	44	18	4.1	7.3	BR	DG
Lower Spring Lake*	109	11	4	3.18	27.1	BR	DG
Mud Lake Sumner	318			7	4.1	NW	
Mud Lake Sullivan	0.3			0.09	2.2	NO	
Mud Lake Lake Mills	95	22	7.4	1.67	8.3	BR, T	DG
Mud Lake Concord	8	6		0.42	0.5	NO, S	DG
Perch Lake	5	7		0.46	0.1	NO, S	SE
Red Cedar Lake	336	6		4.96	2.3	BR, T	SE
Rock Lake	1,371	56	16	11.9	15.1	BR	DG
Rome Mill Pond*	448	7	2	13.63	111.7	BR	DG
Rose Lake	140	10		3.37	1.7	T	SE
Round Lake	2	3		0.26	0.1	NO, S	SE
Sindon/Weegs Pond	10	12		0.6	0.2	NO, S	DG
Spence Lake	33	6		1	0.4	T	
Upper Spring Lake*	24	11	4	1.78	25.0	NO	DG

* Impoundment

Lake Table Key

Public Access

BR – Boat ramp
NO – No access
NW – Navigable water access to lake
R – Roadside access
T – Walk-in trail
X – Access not specified

Lake Hydrologic Types

Drainage Lake (DG): Impoundments and natural lakes with the main water source from stream drainage. Has at least one inlet and one outlet.

Spring Lake (SP): Seldom has an inlet but always has an outlet of substantial flow. Water supply is dependent upon groundwater rather than surface drainage.
Seepage Lake (SE): Landlocked. Water level maintained by groundwater table and basin seal. Intermittent outlet may be present.

Hope Lake

In 2007, the LWCD received a DNR Lake Planning grant to collect water quality and biological information in order to develop a management plan for Hope Lake. The study found that Hope Lake is mesotrophic. There are approximately 26 species of aquatic plants, 3 of which are invasive species: curly-leaf pondweed, Eurasian water milfoil, purple loosestrife. More investigation is pending on the possible presence of a hybrid water milfoil which is a cross between Eurasian water milfoil and the native Northern water milfoil. A variety of fish were found in the lake, but it is thought that winter kill and low dissolved oxygen due to over productivity is a problem. The black tern, a Species of Greatest Conservation Need, was found nesting on Hope Lake.

Lake Ripley

In 1993 Lake Ripley became a Priority Lake Project because it was recognized that (1) the lake provided valuable recreational and economic amenity for the area, (2) it was significantly threatened by the effects of nonpoint source pollution, and (3) there was a high potential for overall improvement once appropriate management strategies were implemented.

Phosphorus, sediment, and other pollutants have degraded Lake Ripley's water quality over the years. The sources of these pollutants are mainly nonpoint source pollution from agriculture and intensive development. Nuisance algae blooms and excessive weed growth, particularly Eurasian water milfoil, results from the pollution loading into the lake. One of the goals of the Lake Ripley Management District is to reduce sediment and phosphorus delivery to the lake.

Wetlands, important for fish and wildlife habitat and pollutant filtration, have significantly decreased in the Lake Ripley watershed. A 1903-1908 mapping effort documented 1,500 acres of wetlands. In the 2006-2010 plan, we reported that there were approximately 385 acres of wetlands in the watershed, which represents a loss of 1,115 acres, mostly attributed to agricultural tillage, drain modification, and development. To address this concern, the Lake Ripley Management District is working to restore and prevent the loss of wetlands in the watershed. To this end, there are now 543 acres of wetlands in the watershed.

Studies and reports on Lake Ripley include: lake management plan, aquatic plant management plan, lake capacity study, and a study on the impacts of pier shading on the near shore environment.

Lower Spring Lake

In 2005, the Lower Spring Lake Protection and Rehabilitation District had an aquatic plant management plan completed because of excessive aquatic plant growth and the desire to improve the recreational and environmental aspects of the lake. Since that time, the District has funded chemical treatment to control invasive plants along the shorelines of developed lots, and in 5 acres of the lake used for fast boating. In addition, a harvester is used all summer to prevent aquatic plants from reaching the surface of the lake. These measures were done to improve navigation, recreation, and riparian access.

The LWCD completed an aquatic plant survey of the lake in 2009 and will have a new management plan completed in 2010. There were 23 species identified in the survey including 2 invasive species: curly-leaf pondweed, and Eurasian water milfoil. It is possible that the aquatic plant control will be altered due to the information collected in the survey and the new guidance from the Department of Natural Resources on aquatic plant control through adaptive management.

Mud Lake – Lake Mills

In 2007, the LWCD received a DNR Lake Planning grant to collect water quality and biological information in order to develop a management plan for Mud Lake. The study documented Mud Lake to be eutrophic. A total of 13 fish species were documented in the lake in 2007. In addition, 19 species of aquatic plants were found, one of which is invasive: curly-leaf pondweed. The Blanding's turtle, a Wisconsin Threatened Species, was viewed in the lake.

Rock Lake

Rock Lake was selected as a Priority Lake Project in 1995. The implementation phase of the project began in 1999 and the project officially ended in December of 2004. The lake has good water quality but nonpoint source pollution and degrading nearshore habitats threaten the water quality and fish and wildlife habitat functions of the lake.

Wetlands and upstream lakes in the watershed have effectively protected Rock Lake's water quality. Throughout the years, these resources function as filters that remove phosphorus and other pollutants before they reach Rock Lake. However, their ability to trap pollutants is declining and the phosphorus loading, especially to Mud Lake, is degrading the water quality of these "buffer" lakes and wetlands.

Fish and wildlife habitat is threatened in the lake and watershed due in part to water quality impairments, and the effects of development and recreation. Rock Lake's diverse aquatic plant community has been impaired due to the extensive piers, seawalls, and motor boat traffic. Drained wetlands and wetlands with declining water quality also result in reduced fish and wildlife habitat in the watershed.

The Land and Water Conservation Department worked cooperatively with the Rock Lake Improvement Association and the Joint Rock Lake Committee on the development of a Lake Management Plan for Rock Lake. The final plan with recommendations and an implementation timeline was completed in 2006. There are several groups are involved in the implementation of the plan.

A study on a drainage ditch that discharges to a navigational channel on Rock Lake was done in 2009. The study found that the ditch has a significant amount of sediment and associated phosphorus in the upper reaches of the ditch. This sediment and phosphorus is carried with base flow and storm events and is discharges into the navigation channel. High bacteria levels were also found in the ditch. The recommendations of the report were the following:

- research bacteria more to determine if additional sampling is warranted and to determine which series of tests (if any) should be considered, and
- implement a public process to choose and implement a management alternative.

Additional studies and reports on Rock Lake include an aquatic plant management plan, lake management plan, and a study of the impacts of pier shading on the near shore environment.

Wetland Resources

Jefferson County has 56,277 acres of wetlands that are designated by the Department of Natural Resources (Map 10). This represents a more than 900 acre increase since 2006 due mostly to restorations in the county that were part of the federal Wetland Reserve Program.

Groundwater Resources

Groundwater recharge takes place in the uplands, which consist of glacial till. The groundwater moves downward toward areas of lower elevation. In places, these low areas are overlain with silt and clay deposits of low permeability. This results in artesian conditions, particularly evident in the Scuppernong Creek and Bark River basins where flowing wells and springs are numerous and where peat mounds developed over some of the springs.

As part of a State requirement, source water areas for each municipal well in the county were delineated. Municipal officials used a 1,200 foot radius surrounding the wells to determine the source water areas.

The Rock River Coalition developed a groundwater flow model for the Rock River watershed. The objectives of this project are as follows:
1. Improve the overall understanding of the hydrology of the Rock River Basin by testing alternative conceptual models of the system.
2. Highlight areas where more data and what types of data are needed.

3. Evaluate surface-water/ground-water interactions and base flow contribution to the Rock River from its sub-basins
4. Estimate amounts and rates of ground-water flow and travel times
5. Provide information that can be used to characterize contaminant movement in the Basin

Goals, Objectives, Activities

The Jefferson County Land and Water Resources Management Plan was developed to plan for a ten year period from 2011 through 2020. The plan goals, objectives, and activities will be reviewed after 5 years as required by the state.

Overall Goal of Land and Water Resources Management Plan

> Families and individuals deserve to have productive farmland, healthy natural areas, and clean water to use and enjoy. Therefore the overall goal of this plan is to restore, improve, and protect land and water resources in Jefferson County.

The work plan contained below details all of the goals, objectives, and activities of the Jefferson County Land and Water Resources Management Plan. This work plan was developed to achieve the overall goal listed above. It also was developed given the conservation needs identified through the public process that included the Advisory Committee and the public hearing.

It is important to note that the implementation of the work plan is dependent on receiving adequate financial resources to cover staff and the cost-sharing programs.

The Work Plan is detailed below in 5 charts below. Items in the Work Plan that are indentified in bold are priority activities for the Land and Water Conservation Department. Benchmarks for priority items, including anticipated outcomes, are included in the Work Plan also.

Goal #1: Improve and protect soil, surface water, and groundwater quality through the implementation of the Working Lands Initiative and the Agricultural Performance Standards.

Objectives	Activities (Responsible Agencies)	Time Frame or Anticipated Outcome
Implement the Working Lands Initiative Farmland Preservation Program to protect county resources. Benchmark: Complete status reviews & issue compliance timelines in 4 quadrants of county in 4 years (see WLI text on page 42).	Develop information and education outreach on the requirements of the program for landowners. (LWCD/UW-EX/DATCP)	2011-2014
	Perform on-site evaluations to determine compliance status. (LWCD)	Ongoing
	Assist landowners with becoming compliant with requirements of program. (LWCD/NRCS/DATCP)	Ongoing
	Work with landowners to develop and revise conservation plans that attain tolerable soil loss on farmland. (LWCD)	Ongoing
	Ensure that all farms in the program have nutrient management plans that meet standards. (LWCD)	Ongoing
	Take necessary steps when landowners are non-compliant with requirements of program.	As needed
Implement the Agricultural Performance Standard to protect county resources.	**Provide technical assistance and cost-sharing so that farms attain compliance with the Agricultural Performance Standards.** (LWCD/NRCS/DATCP) Benchmark: Farms achieve standards by using DATCP cost-share funds.	Ongoing
	Finalize a Memorandum of Understanding with the DNR regarding enforcement responsibilities for Ag Performance Standards and Prohibitions. (LWCD/DNR)	MOU completed in 2011
	Take necessary enforcement steps to attain compliance with Ag Performance Standards. (LWCD/DNR)	Ongoing
	Educate landowners about the manure storage and nutrient management ordinance and assist them with permits to ensure that manure storage facilities are built, expanded, and closed according to standards. (LWCD)	Ongoing

Objectives	Activities (Responsible Agencies)	Time Frame or Anticipated Outcome
	Ensure that manure facilities are built, expanded, and closed according to standards. (LWCD/NRCS/DATCP) Benchmark: All construction meets standards.	As needed
	Ensure that runoff is diverted away from feedlots, barnyards, and manure storage areas by working with landowners to implement practices including roof runoff systems, clean water diversions, and grass waterways. (LWCD/NRCS/DATCP)	As needed ~300 ft/year diversions; ~700 ft/year waterways
	Ensure that nutrient management plans are written and implemented to comply with standards, including cost-sharing of plans. (LWCD/DNR)	Ongoing ~2,500 acres/year
	Work with partners to provide education on nutrient management planning and implementation. (LWCD/UW-EX/DATCP/NRCS)	As needed
	Investigate and track manure spreading complaints and work with partners to remedy any problems. (LWCD/DNR) Benchmark: All problems remedied, and ensure the farms placed on list for nutrient management plan cost-sharing opportunities.	As needed
	Work with livestock operations to ensure they are compliant with Manure Management Prohibitions: 1. no overflow of manure storage, 2. no unconfined manure pile in a water quality management area, 3. no direct runoff from a feedlot or stored manure into waters of the state, 4. no unlimited access by livestock to waters of the state in a location that adequate sod or vegetative cover is not maintained. (LWCD/DNR) Benchmark: All problems remedied.	As needed
Statutes, Administrative Rules, Ordinances: ch. 88 Drainage of Lands, ch. 91 Farmland Preservation, ch. 92 Soil and Water Conservation and Animal Waste Management, ATCP 50 Soil and Water Resource Management Program, NR 151 Runoff Management, NR 243 Animal Feeding Operations, Jefferson County Zoning Ordinance, Jefferson County Animal Waste Storage and Nutrient Management Ordinance		
Costs: 30,000 hours of staff time over 5 years, $300,000 in cost share funds over 5 years.		

Goal #2. Protect and enhance surface water, ground water, and wetland quality, and associated habitat areas.

Objectives	Activities (Responsible Agencies)	Time Frame or Anticipated Outcome
Ensure that livestock facilities expand according to standards that protect County resources. Benchmark: Facilities compliant with standards.	Review application materials and worksheets for completion with Livestock Siting rules. (LWCD)	As needed
	Provide information on status of applications to Zoning, landowners, and DATCP. (LWCD)	As needed
	Attend public meetings. (LWCD)	As needed
Protect surface water resources and habitat quality through implementation of the Conservation Reserve Enhancement Program.	Work with landowners and FSA to implement stream buffers, waterways, and wetland restorations. (FSA/LWCD)	On going ~ 5 contracts/yr
Reduce sediment and phosphorus delivery to the Rock River through implementation of the Rock River Recovery Plan (TMDL). Benchmark: Actively participate in plan process and implement goals through practice implementation. (Rock River TMDL is currently under development.)	Contribute to the Rock River Recovery Plan that will determine how to achieve the pollutant reduction goals. (LWCD/DNR)	2011-2012
	Work with landowners to implement practices to achieve pollutant reduction goals. (LWCD/NRCS/FSA)	2012 - 2020
Ensure farm drainage is done without causing pollution or impacting neighbors.	Coordinate with the Farm Drainage Board on issues regarding legal drains. (LWCD)	As needed
	Provide information to affected landowners. (LWCD)	As needed
Ensure that groundwater is protected from pollution.	Provide landowners with information on testing their drinking water wells. (LWCD/UW-EX)	As needed
	Provide cost-sharing for the closure of wells. (LWCD)	As needed ~ 2 well closures/year

Objectives	Activities (Responsible Agencies)	Time Frame or Anticipated Outcome
Ensure the stabilization of shoreline erosion on agricultural, residential, and public lands.	**Provide landowners with technical assistance, and cost-sharing to control shoreline erosion.** (LWCD)	As needed ~30ft/year
	Assist landowners with the state and county permit process. (LWCD/DNR/Zoning)	As needed
	Educate citizens and municipalities about construction site erosion control measures and laws. (LWCD/DNR/Zoning)	As needed
Ensure decision-makers have the resource information and tools necessary to achieve protection of lakes and rivers in the county. Benchmark: Provide necessary information to decision-makers.	Provide water resource groups with data, maps, educational resources and technical assistance. (LWCD/UW-EX/DNR/RRC)	Ongoing
	Obtain grants to fill data and information gaps, and develop management plans. (LWCD/DNR/water groups)	As needed
	Support the County's efforts to develop and protect green space and environmental corridors that surround lakes, rivers and streams. (LWCD/Parks)	As needed
Ensure that Jefferson County adopts state minimum standards for shoreland zoning.	Assist the Zoning Department with updating the shoreland ordinance language. (Zoning/LWCD/DNR)	Ordinance updated in 2011-2012
Enable citizens to restore wetlands.	Direct landowners to cost-sharing programs and technical assistance for wetland restorations. (LWCD/NRCS)	As needed ~2 restorations/yr
Prevent the loss of wetlands.	Educate the public, land use planning entities, and municipalities about the benefits of wetlands, and laws governing wetlands. (LWCD/DNR/Zoning)	As needed
	Encourage the County, towns, and municipalities to have a minimum building setback from wetlands. (LWCD)	As needed
Statutes, Administrative Rules, Ordinances: ch. 92 Soil and Water Conservation and Animal Waste Management, ATCP 50 Soil and Water Resource Management Program, NR 115 Wisconsin's Shoreland Management Program, NR 117 Wisconsin's City and Village Shoreland-Wetland Protection Program, NR 216 Storm Water Discharge Permits, NR 812 Well Construction and Pump Installation, Jefferson County Zoning Ordinance		
Costs: 20,000 hours of staff time over 5 years; $40,500 in cost-share funds over 5 years		

Goal #3. Preserve and protect natural areas, woodlands, open space, and farmland for the benefit of Jefferson County citizens and visitors.

Objectives	Activities (Responsible Agencies)	Time Frame
Assist with the implementation of the Glacial Heritage Area Plan. Benchmark: Provide necessary work for GHA implementation.	Provide technical support (including planning, grant identification and writing) for natural area and agricultural lands protection. (DNR/Parks/LWCD/Zoning)	As needed
	Provide necessary maps for GHA implementers. (LWCD/LIO)	As needed
Assist with implementation of the Purchase of Agricultural Conservation Easements program.	Provide technical support and maps for PACE program. (Zoning/LWCD)	As needed
Encourage the planting of trees.	Promote and implement the annual tree-seedling sale. (LWCD/DNR Forester)	Annually 20,000 trees/year
Ensure the proper management and protection of woodlands.	Provide landowners with information regarding the Managed Forest Law and direct them to the DNR forester. (LWCD/DNR Forester)	As needed
	Provide educational resources and DNR forester contacts to citizens requesting information on woodland issues. (LWCD)	As needed
	Educate landowners about prevention and control of gypsy moths and emerald ash borers. (LWCD/DNR)	As needed
	Coordinate the gypsy moth suppression program with landowners and the DNR. (LWCD/DNR) Benchmark: Annual spraying if at least 35 acres of land meets qualifications.	Annually
Maintain the Potters Field.	Implement weed management and plant establishment. (LWCD/Parks)	As needed
Ensure that non-metallic mines are restored according to standards. Benchmark: Any restored mines meet standards.	Implement the law requiring mines to have reclamation plans that meet standards. (LWCD/Zoning)	Ongoing
	Inspect and certify proper restoration that adheres to planned reclamation standards. (LWCD)	As needed

Objectives	Activities (Responsible Agencies)	Time Frame
Implement the Wildlife Damage Abatement and Claims Program	Assist landowners with preventing wildlife damage to their crops and provide a pass through from USDA to the landowner for partial payment for crop losses. (LWCD/USDA)	Annually
Implement the Deer Donation Program	Provide a pass through from USDA to venison processors for the cost associated with preparing venison for food pantries. (DNR/LWCD)	Annually
Statutes, Administrative Rules, Ordinances: NR 135 Nonmetallic Mining Reclamation		
Costs: 5,000 hours of staff time over 5 years		

Goal #4. Track the state of soil, water, and natural resources through monitoring and assessment.

Objectives	Activities (Responsible Agencies)	Time Frame
Determine progress in achieving a reduction in soil erosion on cropland. Benchmark: Completed annual survey.	Perform transect survey to collect data on cropland conditions including information on residue and erosion. Display this information on maps. (LWCD)	June of each year
Document the location and trends of livestock in the county. Completed survey in 2013 or 2014.	Perform livestock inventory and display information on GIS maps. (LWCD)	2013 or 2014
Determine progress in maintaining and improving the quality of lakes, rivers, and wetlands. Benchmark: Completed monitoring, training, and map development.	Perform monitoring and/or compile water quality, fish, and habitat data. (LWCD/DNR)	Annually
	Recruit and train citizens to perform water quality monitoring and aquatic invasive species monitoring on lakes and rivers. (LWCD/RRC/DNR)	On going
	Use maps to display conservation projects and land preservation associated with lakes/rivers/wetlands. (LWCD)	On going
Costs: 5,000 hours of staff time over 5 years		

Goal #5. Educate and inform the public regarding Jefferson County resources and LWCD services.

Objectives	Activities (Responsible Agencies)	Time Frame
Ensure that the public is informed about land and water resources and the services provided by LWCD.	**Provide educational talks to various groups.** (LWCD) Benchmark: Approximately 6 talks/year.	Ongoing
	Create and staff an educational booth for the Jefferson County Fair. (LWCD)	Annually in July
	Create maps for customers showing various layers. (LWCD)	As needed
	Distribute the LWCD newsletter. (LWCD)	Biannually
	Update the LWCD website. (LWCD)	As needed
Costs: 1,000 hours of staff time over 5 years		

Key to Responsible Agencies:
DATCP – Department of Agriculture, Trade, and Consumer Protection
DNR – Department of Natural Resources
FSA – Farm Service Agency, U.S. Department of Agriculture
LIO – Jefferson County Land Information Office
LWCD – Jefferson County Land and Water Conservation Department
NRCS – Natural Resources Conservation Service, U.S. Department of Agriculture
Parks – Jefferson County Parks Department
RRC – Rock River Coalition
USDA – U.S. Department of Agriculture
UW-EX – University of Wisconsin-Extension
Zoning – Jefferson County Zoning and Planning Department

Work Plan Implementation

The work plan will be implemented by the Land and Water Conservation Department. Components of the plan will be implemented in accordance to various state and local ordinances and regulations. Relevant rules, ordinances, and programs are included below.

The Animal Waste Storage and Nutrient Management Ordinance (available from the LWCD and online at http://www.co.jefferson.wi.us/) is used to ensure manure storage structures are designed, constructed, altered, and closed according to standards and to ensure nutrient management plans developed in conjunction with the ordinance meet necessary standards. Enforcement matters for the Animal Waste Storage ordinance are handled by the LWCD.

The LWCD will use state and county cost-sharing (if available) to help achieve the goals of the plan. A list of conservation practices that are available include:

Access roads, Animal trails and walkways, Barnyard runoff control systems, Cattle crossings, Contour farming, Cover and green manure crop, Critical area stabilization, Diversions, Field windbreaks, Filter strips, Grade stabilization structures, Heavy use area protection, Livestock fencing, Livestock watering facilities, Manure storage systems, Manure storage system closure, Milking center waste control systems, Nutrient management, Pesticide management, Prescribed grazing, Relocating or abandoning animal feeding operations, Residue management (No-Till or Mulch Till), Riparian buffers, Roofs, Roof runoff systems, Sediment basins, Shoreland habitat restoration, Sinkhole treatment, Streambank and shoreline protection, Strip-cropping, Subsurface drains, Terrace systems, Tree and shrub establishment, Underground outlets, Waste transfer systems, Wastewater treatment strips, Water and sediment control basins, Waterway systems, Well decommissioning, Wetland development or restoration

The livestock siting portion of the Jefferson County Zoning Ordinance was passed in 2006. It consists of a state statute and rule that governs the siting of new and expanding livestock operations. The law details the standards that operators must meet to obtain permit approval. The LWCD reviews the required application, employee training plan, environmental incident response plan, and the 5 worksheets that cover: animal units, odor management, waste and nutrient management, waste storage facilities, and runoff management. The LWCD consults with the Zoning Department on matters of enforcement.

The Nonmetallic Mining Reclamation Ordinance (available from LWCD and online at http://www.co.jefferson.wi.us/) requires reclamation of all non-exempt excavation sites to a permitted plan land use. The LWCD regulates and issues permits to ensure compliance with Chapter NR 135, Wis. Adm. Code. The code establishes standards that address environmental protection measures including but not limited to, topsoil management, surface/groundwater protection, slope stabilization, and overall site

erosion. The LWCD administers an annual certification fee with inspections, and allows for compliance via enforcement action.

The Shoreland Zoning Ordinance (available from the Zoning Department and online at http://www.co.jefferson.wi.us/) is used to ensure that shoreland habitat restoration plans meet standards when landowners propose to make changes to their shoreland property within 75 feet of water. In addition, the Shoreland Zoning Ordinance is used when determining if there are erosion problems that necessitate retaining walls within 75 feet of water. Enforcement matters for this ordinance are handled by the Zoning Department.

The Runoff Management Administrative Code (NR 151) for the State will be used for implementation and enforcement of the Agricultural Performance Standards and Prohibitions.

Rules to control polluted runoff from agricultural lands and other sources took effect on October 1, 2002. The DNR rule (NR 151) sets performance standards and prohibitions for farms to prevent runoff and protect water quality. The DATCP rule (ATCP 50) identifies conservation practices that farms must follow to meet DNR standards. The agricultural performance standards and prohibitions are as follows:

- All land were crops are grown shall be cropped to achieve a soil erosion rate equal to or less than the "tolerable" (T) rate established for that soil. (NR 151.02)
- All livestock producers must construct, alter, or close manure storage facilities to prevent structural failures and leaks. (NR 151.05)
- All livestock producers within a water quality management area must divert clean water from feedlots, manure storage, and barnyards. (NR 151.06)
- All crop and livestock producers that apply manure or other nutrients to agricultural fields shall do so according to a nutrient management plan. (NR 151.07)
- All livestock producers must comply with the following manure management prohibitions. (NR 151.08)
    - No overflow of manure storage facilities
    - No unconfined manure pile in a water quality management area
    - No direct runoff from a feedlot or stored manure into the waters of the state
    - No unlimited access by livestock to waters of the state in a location where high concentrations of animals prevent the maintenance of adequate sod or self-sustaining vegetative cover

A water quality management area (WQMA) is defined as:

- the area within 1,000 feet from the ordinary high water mark of navigable waters that consist of a lake, pond or flowage,
- the area within 300 feet from the ordinary high water mark of navigable waters that consist of a river or stream,
- a site that is susceptible to groundwater contamination, or that has the potential to be a direct conduit for contamination to reach groundwater.

The Rock River Basin Total Maximum Daily Load (TMDL) report is expected to be finalized in 2010. As part of the Federal Clean Water Act, this report will identify how much sediment and phosphorus the Rock River can handle without impairment. The next step will be a plan for targeted reductions for sediment and phosphorus in the Rock River Basin. The Land and Water Conservation Department will take part in both planning this "recovery plan" and implementing the recommended reductions as they relate to agricultural nonpoint sources.

Working Lands Initiative – please see section below.

Wisconsin Administrative Code NR 216 Storm Water Discharge Permits requires that a notice of intent shall be filed with the DNR by any landowner who disturbs one or more acres of land. This disturbance can create a point source discharge of storm water from the construction site to waters of the state and is therefore regulated by DNR. Agriculture is exempt from this requirement for activities such as planting, growing, cultivating and harvesting of crops for human or livestock consumption and pasturing or yarding of livestock as well as sod farms and tree nurseries. Agriculture is not exempt from the requirement to submit a notice of intent for one or more acres of land disturbance for the construction of structures such as barns, manure storage facilities or barnyard runoff control systems. (See s. NR 216.42(2), Wis. Adm. Code.) Furthermore, construction of an agricultural building or facility must follow an erosion and sediment control plan consistent with s. NR 216.46, Wis. Adm. Code and including meeting the performance standards of s. NR 151.11, Wis. Adm. Code. An agricultural building or facility is not required to meet the post-construction performance standards of NR 151.12, Wisconsin Administrative Code.

In addition to the rules and ordinances included above, the LWCD will consult with its partners to ensure water quality objectives and problems are identified. This will include consulting with various DNR personnel to specify water quality objectives for each water basin. Some of this information is contained in the State of the Rock River Basin Report (April 2002, PUBL # WT-668-2002).

Working Lands Initiative

For Farmland Preservation Program compliance under Working Lands Initiative (WLI), the status review schedule will be structured by dividing the county into quadrants. Each year beginning in 2011, the LWCD will evaluate existing participants beginning in Quadrant 1 and working in a clockwise fashion covering the following townships:

- Quadrant 1 = Koshkonong, Oakland, Sumner, Jefferson
- Quadrant 2 = Lake Mills, Waterloo, Milford, Aztalan
- Quadrant 3 = Ixonia, Watertown, Farmington, Concord
- Quadrant 4 = Palmyra, Sullivan, Cold Spring, Hebron

In 2010, 12 landowners were selected randomly from the list of existing participants in FPP and will be fully evaluated for the FPP under the new WLI program. This will give staff an opportunity to fine tune the evaluation process prior to 2011. The Working Lands Initiative Farmland Preservation Program Compliance Checklist prepared for the 2010 evaluation is contained in Appendix D.

Everyone currently in FPP will be given the same date for compliance with nutrient management planning - September 2012 for the 2013 crop year. Rather than requesting the entire nutrient management plan from each landowner, only the NRCS 590 check list will be collected for compliance with WLI. However landowners must be able to produce a current nutrient management plan upon request of the LWCD. Information/Education strategy:

- July 2010 - Evaluation of 12 randomly selected landowners for FPP under WLI
- August 2010 - Newsletter dedicated to WLI
- October 2010 - FPP/WLI information letter to be mailed out to current FPP participants
- January 2011 - Annual Certification letter mailed along with a copy of the 590 check list and discussion of farmer training or other Nutrient Management Plan development options to all current FPP participants
- Ongoing - Develop Farmer Training with assistance of DATCP for Nutrient Management Planning

Please note that the Jefferson County Zoning Department is responsible for updating the Farmland Preservation Plan and zoning district(s) to meet the requirements of the new Working Lands law. The Zoning Department has started this planning process which includes a steering committee and a plan for public input. In 2010, the focus will be on understanding the implications of the state's new farmland preservation law, developing different County farmland preservation policy refinement options for consideration, evaluating those options in a public setting, and selecting a preferred farmland preservation policy refinement approach from among the options. In 2011, the work will focus on developing the plan and advising ordinance changes necessary to implement the preferred policy refinement approach. The goal is to deliver the Farmland Preservation Plan to DATCP by late Spring 2011 and the Farmland Preservation zoning ordinance in Summer 2011.

Priority Farm Strategy

Determining and achieving compliance with the Agricultural Performance Standards is a large task. Therefore, the job will be done based on a priority strategy so that the most critical sites and areas are handled first. Below is the list of farms that are considered Priority Farms.

1. Farms receiving a "notice of discharge" or "notice of intent" from the DNR.

2. Farms with land in a water quality management area that also have livestock.

3. Farms located in watersheds draining to "Impaired Waters" that are impaired due to sediment or nutrients. Because the watersheds of these impaired waters essentially cover the entire county, the only farms that will be included as "priorities" in these watersheds are defined as being within the WQMA of the impaired water.

4. Farms identified by the LWCD or other cooperating agency as having significant problems with manure management, including problems with manure spreading.

5. Farms that have excessive rates of cropland erosion as identified by the LWCD or other cooperating agency.

Implementation Strategy for NR 151
Agricultural Nonpoint Performance Standards and Prohibitions

The Land and Water Conservation Department will implement the following strategy to ensure that farms are in compliance or attain compliance with the Agricultural Nonpoint Performance Standards and Prohibitions.

Information and Education Activities (related to Standards and Prohibitions)

In order to educate landowners about the Agricultural Performance Standards and Prohibitions, including applicable conservation practices and cost-sharing availability, the following will be implemented:

- Informational Session for farmers and landowners will be held.
- Articles will be included in the LWCD newsletter that is distributed 2 times each year.
- Articles will be included in the FSA newsletter that is distributed approximately 4 times each year.
- Press releases will be sent to area papers.
- Information will be posted on the LWCD website.
- When available, education materials from DNR and DATCP will be provided to landowners, and made available at the LWCD office, UW-Extension, and cooperatives in the area.

Determining Compliance

Records Inventory

1. Review records of County, State, and Federal programs to determine participants with contracts to install conservation practices. Note: All applicable privacy protection rules and laws will be followed.
2. Determine which areas (parcels, fields, facility, etc.) are subject to standards and prohibitions.
3. Develop a map to display the installed practices and the areas subject to standards and prohibitions.

4. Determine the landowners who are meeting standards and prohibitions. This compliance is based on implemented conservation practices, participation with the WI Farmland Preservation Program and federal farm program conservation provisions, and adherence to state animal waste regulations such as NR 243 and WPDES.

Onsite Evaluations

1. Determine and prepare a list of the lands that require onsite evaluations. Lands that are not known whether they meet standards and prohibitions will be visited first.
2. Contact landowners of lands that will be visited by staff in order to explain process and schedule a site evaluation.
3. Conduct onsite evaluation.
    a. Determine and document the extent of current compliance with each of the performance standards and prohibitions.
    b. If lands are found to be non-compliant, determine practices needed, cost associated with practices, and eligibility for cost sharing.

Compliance Checklist

When determining compliance, the LWCD staff will use a Compliance Checklist. A draft of this checklist is included as Appendix C. The Checklist will be refined as we learn more from using it.

Compliance Report and Landowner Notification

1. Prepare an NR 151 Status Report and send to landowners of evaluated lands. This report will contain the following:
- Current status of compliance with each of the performance standards and prohibitions.
- If lands are non-compliant, identify options for corrective action and rough cost estimates for compliance.
- Eligibility for cost-sharing.
- Identification of funding sources and technical assistance including from federal, state, county, and third party service providers.
- Conditions and technical standards that apply with cost-sharing.
- Information about voluntary compliance and steps that will be taken if compliance is not voluntary.
- Signature line indicating landowner agreement or disagreement with report findings.

2. The compliance reports will be kept in the office as public record.

Voluntary Compliance Protocol

1. Receive request for cost-sharing and/or technical assistance from landowner.
2. Confirm cost-share eligibility and determine availability of technical assistance.
3. If State or County cost-share will be used, develop and issue cost-share contract.
4. If Federal cost-share will be used, initiate and assist with communication between agency staff and the landowner.

Non-Voluntary Compliance Protocol

If the landowner chooses not to install or implement corrective actions after an offer of cost-sharing is made, then LWCD will issue a Landowner Notification according to NR 151.09(5-6) and/or 151.095(6-7).

The Landowner Notification will be designed by the DNR and will contain the following:
- A description of the performance standard or prohibition being addressed.
- The compliance status determination made in accordance with NR 151.
- The determination as to which best management practices or other corrective measures are needed and which, if any, are eligible for cost sharing.
- The determination that cost sharing is or has been made available, including a written offer of cost sharing when appropriate.
- An offer to provide or coordinate the provision of technical assistance.
- A compliance period for meeting the performance standard or prohibition.
- An explanation of the possible consequences if the owner or operator fails to comply with provisions of the notice.
- An explanation of state or local appeals procedures if required.

Implementation of Corrective Action and Cost-Sharing

1. If cost sharing is involved, finalize and execute the cost-share agreement including a schedule for installing or implementing the best management practice(s).
2. Provide technical services and oversight:
    - Provide or review conservation plans.
    - Provide or review engineering designs.
    - Provide construction oversight.
    - Evaluate and certify installation of conservation practices.
3. After corrective measures are applied, conduct evaluation to determine if land is now in compliance with relevant performance standards and prohibitions.
    - If site is compliant, update NR 151 Status Report and issue Letter of NR151 Compliance. A Letter of NR 151 Compliance serves as official notification that the site have been determined to now be in compliance with applicable performance standards and prohibitions.. When and where counties are not operating under a local ordinance, the issuance of a Letter of NR 151 Compliance would likely be a joint effort with the DNR in order to give it the significance and standing that it merits.
    - If site is not compliant, seek non-regulatory remedies or initiate enforcement action.

Enforcement

The Land and Water Conservation Department plans to meet with staff from the DNR in order to determine enforcement responsibilities and protocols for violations to the Agricultural Nonpoint Performance Standards and Prohibitions. DNR staff included in the meeting will include the Upper and Lower Rock River Basin Water Team Leaders,

Wastewater Engineer, and Wastewater Specialist, and the Conservation Warden(s). The goal of the meeting(s) will be to develop a Memorandum of Understanding that spells out the protocols for enforcement and the responsibilities of each party. The document will cover the item below:

1. If a landowner does not fix the identified problem by the deadline, then prepare and issue Notice of NR 151 Violation letter, or other appropriate notice per local ordinance, pursuant to NR 151.09(5) or (6), or 151.095(6) or (7).
2. Schedule enforcement conference.
3. Participate in enforcement conference.
4. Initiate enforcement action.

Compliance Monitoring

Conduct periodic evaluations to verify ongoing compliance.

Respond to public complaints alleging noncompliance.

Ensure new owners are made aware of (and have access to) NR 151 compliance information that may pertain to the property they have just acquired.

Annual Reporting

1. Maintain a record of annual site evaluations which shows their location and compliance status.
2. Report estimated timeframe and staff resources needed to complete remaining site evaluations in the County.
3. Maintain a record of estimated costs of corrective measures for each parcel that has been evaluated and for which corrective measures have been estimated.
4. Maintain a record showing parcels where cost sharing has been applied to implement standards and prohibitions, the amount and source of those funds, and the landowner share.
5. Maintain a record and location of lands receiving Status Report letters and Notice of Violation letters.
6. Maintain a record of the annual cost of technical and administrative assistance needed to administer agricultural performance standards and prohibitions.
7. Maintain other reports as may be required in ATCP 50.

Information and Education Strategy

Education is an integral part of the majority of the work done by the Land and Water Conservation Department. Ongoing education efforts are implemented in concert with the Land and Water Resource Management Plan to ensure the success of the plan. Some of the educational efforts are done in conjunction with the UW-Extension. They offer the expertise necessary to make the efforts successful. The following is a list of educational actions that will be taken to implement the work plan:

Personal Contacts with Landowners
Demonstration Projects
Workshops
Newsletters – LWCD Conservation Counts, FSA newsletter, various UW-EX newsletters
Press Releases to newspaper, local cable stations, radio stations
LWCD Website
Radio Interviews
Pamphlets and Brochures on a Wide Range of Topics

The LWCD takes part in the Jefferson County Fair in the "Jefferson County Services Tent". A display is put together each year that explains LWCD programs and educates visitors about the land and water resources in Jefferson County.

The Land and Water Conservation Department and the Federal agriculture departments (FSA and NRCS) in Jefferson County are currently located in two separate locations. This sometimes leads to confusion and inconvenience for the landowners. As a way to be a "one-stop-shop" for the landowners, the LWCD and the federal departments will look for opportunities to co-locate.

Due to budget constraints, Jefferson County combined the Crops and Soils Agent position and the Dairy and Livestock Agent position. The LWCD will work with the new position – Agriculture Agent – to plan educational programs/talks that relate to agriculture and the goals contained in this plan.

The Farm Service Agency is considering moving forward with a day-long rural landowner workshop. The LWCD will partner with FSA and other organizations to explore and implement this idea.

It is more important than ever (due to budgetary constraints) to have citizens contribute to monitoring of our water resources. In addition, the citizens that use the water resources often, are the ones who are able to identify possible problems before they get too big to manage. To this end, the LWCD will train citizens to perform water quality monitoring, and invasive species monitoring.

Monitoring and Evaluation

Monitoring and evaluation is an integral component to the success of the Land and Water Plan and its goals. It will be an ongoing process that is implemented in a variety ways. Throughout this process, necessary adjustments will be made to how actions in the work plan are implemented to ensure achievability of the goals.

Land and Water Resource Management Monitoring and Evaluation

Agricultural Performance Standards and Prohibitions – annually – track compliance status of farms
Conservation Practice Implementation – ongoing – map completed practices, tally the total practice units, estimate phosphorus and sediment reductions achieved
Farmland Preservation Program – 15-20% of farms in FPP monitored annually – determine if farms are following conservation plans and protecting their land from erosion
Livestock Inventory – every 5 years – determine location, number of facilities, quantitative ranking, and trend analysis
Manure Complaint Investigations – ongoing – track complaints, identify problems, and track progress toward rectifying problems
Nonmetallic Mines – annually or as needed – track exposed and reclaimed acreage meeting approved plan standards
Nutrient Management Plans – annually – of the plans submitted to LWCD: map the fields that are in plans, estimate total acres of farms with plans
Transect Survey – annually – estimates soil loss, tracks residue levels and cropping system trends
Water Quality Monitoring in Lakes and Streams – as available – track water quality conditions through monitoring data

NOTE: The LWCD computer mapping system will be an important tool in the monitoring and evaluation process. Much of the information we collect (transect survey, livestock inventory, FPP participation, Nutrient Management Plans, etc.) is entered onto the system. A wide variety of maps can be produced at different scales that will assist in conservation planning and land and water resource protection.

Administrative Monitoring and Evaluation

All Office Programs – annually – review and refine administration of programs, evaluate available financial and staff resources and make necessary adjustments
Cost-Share Programs (State and County) – annually – review and update ranking system to allocate money to the most critical resource concerns first, regularly review and make necessary changes to implementation procedures, track amount of funds used in implementation of practices
Federal and County Cooperation – quarterly meetings between LWCD, FSA, and NRCS department heads to discuss coordination of activities and programs, twice-a-year meetings with all staff from LWCD, FSA, and NRCS to discuss coordination of activities
Financial Audit – annual audit of grant revenues and expenditures by a 3rd party

LWCD Staff meetings – periodic meetings to discuss coordination of activities and programs

Partners in Management

Several entities are involved in the management of Jefferson County's land and water resources. Though each has its own mission, jurisdiction, and priorities, these entities are all working to protect and enhance the land and water resources into the future. This section lists these different agencies and organizations. Though efforts were made to include all management partners, this list is not necessarily comprehensive.

Federal Government

Army Corps of Engineers (Corps)
The Corps is the federal agency responsible for issuing permits to allow alteration of wetlands.

Contact Information:
Stacey Marshall
U.S. Army Corps of Engineers
First Federal Savings Bank Bldg. Room 101
1617 East Racine Ave.
Waukesha, WI 53186
262-547-3064, ext 104
stacy.l.marshall@usace.army.mil

Farm Service Agency (FSA)
U.S. Department of Agriculture agency that administers agricultural programs including the Conservation Reserve Program, Conservation Reserve Enhancement Program, price supports, production controls, and conservation cost sharing.

Contact Information:
Debra Schut, County Executive Director
Farm Service Agency
134 W. Rockwell Street
Jefferson, WI 53549
920-674-2020 ext. 107
debra.schut@wi.usda.gov

U.S. Fish and Wildlife Service (F&WS)
Federal agency that works with participating Land Conservation Committees to protect and restore wetlands through a matching grants program.

Contact Information:
Art Kitchen
U.S. Fish and Wildlife Service
4511 Helgesen Drive
Madison, WI 53718
608-221-1206 ext. 13, fax: 608-221-1357

Natural Resources Conservation Service (NRCS)
An agency of the U.S. Department of Agriculture, NRCS provides soil survey, conservation planning, and technical assistance to local land users. They administer the Environmental Quality Incentives Program, Wildlife Habitat Incentives Program, and the Wetland Reserve Program.

Contact Information: Dennis Vollmer, District Conservationist
Natural Resources Conservation Service
134 W. Rockwell St.
Jefferson, WI 53549
920-674-2020 ext. 104, fax: 920-674-6195
dennis.vollmer@wi.usda.gov

State Government

Department of Natural Resources (DNR)
The state agency responsible for managing state-owned lands and protecting public waters. DNR administers programs to regulate, guide, and assist with managing land, water, fish, and wildlife.

Contact Information:
Ken Johnson, Water Leader, 608-275-3243
Jim Congdon, Upper Rock Water Team Leader, 920-387-7872
Sue Josheff, Lower Rock Water Team Leader, 608-275-3243
Susan Oshman, Land Leader, 608-275-3250
Travis Schroeder, Water Management Specialist, 414-263-8701
Charles Kilian, Wildlife Specialist, 920-648-3054
Mary Ann Kroehn-Buenzow, Forester, 608-743-4830
Randy Stampfl, Forester, 920-387-7884
David Walz, Conservation Warden, 920-988-9340
Ryan Ellifson, Conservation Warden, 920-674-5880
Tom Portle, Statewide Non-metallic Mining Coordinator, 608-267-0877

South Central Region
Department of Natural Resources
3911 Fish Hatchery Road
Madison, WI 53711
608-275-3266, fax: 608-275-3338

Department of Agriculture, Trade, and Consumer Protection (DATCP)
The state agency responsible for establishing and administering statewide soil and water conservation policies and programs. DATCP administers state cost-sharing funds for a variety of LWCD operations, including support of staff, materials, and conservation practices.

Contact Information:
Keith Foye, Chief, Land Management Section, 608-224-4603
Richard Castelnuovo, Chief, Resource Planning Section, 608-224-4608
Ed Odgers, Chief, Conservation Engineering Section, 608-224-4630
Department of Agriculture, Trade, and Consumer Protection
P.O. Box 8911
Madison, WI 53708-8911

University of Wisconsin – Extension (UW-EX)
The outreach of the University of Wisconsin system responsible for formal and informal educational programs throughout the state.

Contact Information:
Heidi Johnson, Agriculture Agent
Steve Grabow, Community Development Agent
Suzanne Wade, Rock River Basin Educator
864 Collins Road
Jefferson, WI 53549
920-674-7295, fax: 920-674-7200
http://www.uwex.edu/ces/cty/jefferson/

County Government

Farm Drainage Committee
The Jefferson County committee that oversees legal drain issues in the County.

Contact Information:
For current appointments: Jefferson County Administration, 920-674-7101

Land and Water Conservation Department
The mission of the Jefferson County Land and Water Conservation Department is to promote the implementation of land and water conservation practices and to achieve greater environmental stewardship of the land.

Contact Information:
Mark Watkins, County Conservationist
Patricia Cicero, Water Resources Management Specialist
Nancy Lannert, Resource Conservationist
Joe Strupp, Resource Conservationist
Gerry Kokkonen, GIS/Land Use Specialist
Beth Klotz, Administrative Clerk
Land and Water Conservation Department
320 South Main Street
Jefferson, WI 53549
920-674-7110, fax: 920-674-7114
http://www.co.jefferson.wi.us/lcon/

Land Information Office
The Jefferson County Land Information Office compiles and maintains real estate rolls and maps for property assessment and taxation.

Contact Information:
Andrew Erdman, Director
Land Information Office
320 South Main Street
Jefferson, WI 53549
920-674-7254, fax: 920-674-7368

Parks Department
The Jefferson County Parks Department is responsible for maintaining and improving the park facilities within the park system, as well as expanding the system as the demand for additional recreational facilities increases.

Contact Information:
Joseph Nehmer, Director
Parks Department
320 South Main Street
Jefferson, WI 53549
920-674-7260, fax: 920-674-7200

Zoning and Sanitation Department
The Jefferson County Zoning and Sanitation Department advises applicants about required permits and approvals, issues permits, makes inspections, and takes enforcement actions under the Jefferson County Zoning, Land Division/Subdivision, Floodplain, and Sanitation Ordinances.

Contact Information:
Rob Klotz, Zoning Administrator
Zoning and Sanitation Department
320 South Main Street
Jefferson, WI 53549
920-674-7130, fax: 920-674-7368

Town Organizations

Jefferson County Towns Association

Agricultural Organizations

Jefferson County Animal Agriculture Alliance
Jefferson County Dairy Herd Improvement Association
Jefferson County Farm Bureau

Lake Organizations

Blue Spring Lake Management District
The Friends of Red Cedar Lake
Golden Lake Association
Joint Rock Lake Committee
Lake Ripley Management District

Lower Spring Lake Protection and Rehabilitation District
Mud Lake Habitat Restoration Association
Rock Koshkonong Lake District
Rock Lake Improvement Association
Rock River Koshkonong Association
Rome Lake Improvement Association

River Organizations

The Friends of Allen Creek Watershed
Rock River Coalition

Wetland Organizations

Lake Koshkonong Wetland Association

Conservation, Sportsman, and Environmental Groups

Badger Fly Fishers
Conservation Congress
Ducks Unlimited, Koshkonong Chapter
Federation of Fly Fishers
Fort Atkinson Wisconservation Club
Isaac Walton League
Jefferson County Environmental Network
Jefferson County Land Trust
Jefferson County Snowmobile Alliance
Jefferson Sportsmen Club
Lake Mills Conservation Club
Milford Hills Hunt Club
Oakland Conservation Club
Oconomowoc Sportsmans Club, Inc.
Pheasants Forever
Watertown Conservation Club

APPENDIX A

Ranking Sheet for Jefferson County Cost-Sharing

Ranking Sheet for Jefferson County Cost-Share Program

Name: _____

Address: _____

Main Practice: _____

Supporting Practices: _____

	Points
Is this practice(s) needed to be in compliance with the Agricultural Standards and Prohibitions, in response to an enforcement action, or in response to a violation? If Yes, points = 15	_____
Will the practice address soil quality? If Yes, points = 10	_____
Will the practice address water quality? If Yes, points = 10	_____
Will the practice address ground water quality? If Yes, points = 10	_____
Will the practice address habitat quality? If Yes, points = 5	_____

Circle the main practice of application and assign the appropriate points.

<u>High Priority Practices</u>, Points = 15 Barnyard runoff control system, Cattle crossing, Diversion, Manure storage systems, Manure storage system closure, Milking center waste control system, Nutrient management (for 1st time cost-sharing), Relocating or abandoning animal feeding operations, Residue management (new practice only), Roofs, Roof runoff system, Sediment basin, Strip-cropping, Terrace system, Waste transfer system, Wastewater treatment strip, Well decommissioning	_____
<u>Medium Priority Practices</u>, Points = 10 Contour farming, Critical area stabilization, Field windbreaks, Grade stabilization structures, Heavy use area protection, Pesticide management, Shoreland habitat restoration, Streambank and shoreline protection (if combined with shoreland habitat restoration), Underground outlets, Water and sediment control basins, Waterway systems	_____
<u>Low Priority Practices</u>, Points = 5 Access road, Animal trails and walkways, Cover and green manure crop, Filter strips, Livestock fencing, Livestock watering facilities, Nutrient management (if received previous cost-sharing), Prescribed grazing, Riparian buffer, Sinkhole treatment, Streambank and shoreline protection (if stand alone project), Subsurface drain, Tree and shrub establishment, Wetland restoration	_____
Total Points	_____

APPENDIX B

Soils of Jefferson County

Map Symbol – Soil Name	Acres	Percent
Ad – Adrian muck	8,935	2.4
AzA – Aztalan fine sandy loam, 0 to 3 percent slopes	7,520	2.0
BaA – Barry silt loam, 0 to 3 percent slopes	1,755	0.5
BoC – Boyer loamy sand, 6 to 12 percent slopes	2,115	0.6
BpB - Boyer sandy loam, 1 to 6 percent slopes	7,055	1.9
CaB2 – Casco loam, 2 to 6 percent slopes, eroded	950	0.3
CaC2 – Casco loam, 6 to 12 percent slopes, eroded	4,555	1.2
CrD2 – Casco-Rodman complex, 12 to 20 percent slopes, eroded	4,600	1.2
CrE – Casco-Rodman complex, 20 to 45 percent slopes	1,490	0.4
CtB – Chelsea loamy fine sand, 1 to 6 percent slopes	1,005	0.3
CtC – Chelsea loamy fine sand, 6 to 20 percent slopes	850	0.2
DcA – Del Rey silt loam, 0 to 3 percent slopes	3,530	0.9
DdB – Dodge silt loam, 2 to 6 percent slopes	3,550	0.9
Ed – Edwards muck	805	0.2
Ev – Elvers silt loam	450	0.1
Fn – Fluvaquents	3,455	0.9
FoC2 – Fox loam, 6 to 12 percent slopes, eroded	4,330	1.2
FsA – Fox silt loam, 0 to 2 percent slopes	3,655	1.0
FsB – Fox silt loam, 2 to 6 percent slopes	12,870	3.4
Gd – Gilford sandy loam	1,720	0.5
GsB – Grays silt loam, 2 to 6 percent slopes	720	0.2
GtB – Grellton fine sandy loam, 2 to 6 percent slopes	1,345	0.4
GwB – Griswold sandy loam, 2 to 6 percent slopes	610	0.2
GwC2 – Griswold sandy loam, 6 to 12 percent slopes, eroded	375	0.1
HeB – Hebron loam, 1 to 6 percent slopes	2,780	0.7
Ht – Houghton muck	28,915	7.7
JuB – Juneau silt loam, 1 to 6 percent slopes	1,390	0.4
Kb – Keowns silt loam	14,675	3.9
KdA – Kibbie fine sandy loam, 0 to 3 percent slopes	5,175	1.4
KeB – Kidder sandy loam, 2 to 6 percent slopes	5,670	1.5
KeC2 – Kidder sandy loam, 6 to 12 percent slopes, eroded	3,730	1.0
KfB – Kidder loam, 2 to 6 percent slopes	11,900	3.2
KfC2 – Kidder loam, 6 to 12 percent slopes, eroded	15,505	4.1
KfD2 – Kidder loam, 12 to 20 percent slopes, eroded	5,625	1.5
KgB – Kidder loam, moderately well drained, 2 to 6 percent slopes	3,155	0.8
LaB – Lamartine silt loam, 2 to 6 percent slopes	14,645	3.9
LyB – Lorenzo sandy loam, 2 to 6 percent slopes	300	0.1
MgA – Martinton silt loam, 0 to 2 percent slopes	2,440	0.6
MgB – Martinton silt loam, 2 to 6 percent slopes	2,260	0.6
MmA – Matherton silt loam, 0 to 3 percent slopes	9,210	2.5
MnA – Matherton silt loam, clayey substratum, 0 to 3 percent slopes	3,585	1.0
MoB – Mayville silt loam, 2 to 6 percent slopes	4,665	1.2
MpB – McHenry silt loam, 2 to 6 percent slopes	7,005	1.9
MpC2 – McHenry silt loam, 6 to 12 percent slopes, eroded	5,585	1.5
Mr – Milford silty clay loam	11,885	3.2

Map Symbol – Soil Name	Acres	Percent
MvB – Moundville loamy sand, 1 to 6 percent slopes	1,620	0.4
Ot – Otter silt loam	1,965	0.5
Pa – Palms muck	14,275	3.8
Pb – Palms muck, ponded	2,530	0.7
Pg – Pits, gravel	340	0.1
RaA – Radford silt loam, 0 to 3 percent slopes	1,790	0.5
RnB – Ringwood silt loam, 2 to 6 percent slopes	620	0.2
RtB – Rotamer loam, 2 to 6 percent slopes	1,865	0.5
RtC2 – Rotamer loam, 6 to 12 percent slopes, eroded	7,125	1.9
RtD2 – Rotamer loam, 12 to 20 percent slopes, eroded	5,605	1.5
RtE2 – Rotamer loam, 20 to 30 percent slopes, eroded	1,895	0.5
SbA – St. Charles silt loam, moderately well drained, 0 to 2 % slopes	1,325	0.4
SbB – St. Charles silt loam, moderately well drained, 2 to 6 % slopes	4,140	1.1
SfB – St. Charles silt loam, moderately well drained, gravelly Substratum, 2 to 6 percent slopes	2,440	0.6
ShB – Salter loamy sand, 2 to 6 percent slopes	465	0.1
SkB – Saylesville silt loam, 2 to 6 percent slopes	1,990	0.5
SlC2 – Saylesville silty clay loam, 6 to 12 percent slopes, eroded	435	0.1
Sm – Sebewa silt loam	7,920	2.1
Sn – Sebewa silt loam, clayey substratum	6,565	1.8
SoB – Sisson fine sandy loam, 1 to 6 percent slopes	1,555	0.4
SoC2 – Sisson fine sandy loam, 6 to 12 percent slopes, eroded	685	0.2
ThB – Theresa silt loam, 2 to 6 percent slopes	1,580	0.4
ThC2 – Theresa silt loam, 6 to 12 percent slopes, eroded	3,145	0.8
TuA – Tuscola silt loam, 0 to 2 percent slopes	1,060	0.3
TuB – Tuscola silt loam, 2 to 6 percent slopes	2,640	0.7
Ud – Udorthents	385	0.1
VrB – Virgil silt loam, 2 to 6 percent slopes	3,255	0.9
VwA – Virgil silt loam, gravelly substratum, 0 to 3 percent slopes	2,095	0.6
Wa – Wacousta silty clay loam	17,785	4.8
WmA – Wasepi sandy loam, 0 to 3 percent slopes	3,390	0.9
WtA – Watseka Variant loamy sand, 0 to 3 percent slopes	3,030	0.8
WvA – Wauconda silt loam, 0 to 2 percent slopes	4,915	1.3
WvB – Wauconda silt loam, 2 to 6 percent slopes	2,860	0.8
WxB – Whalan loam, 2 to 6 percent slopes	2,415	0.6
WxC2 – Whalan loam, 6 to 12 percent slopes, eroded	705	0.2
WyA – Whalan Variant silt loam, 0 to 3 percent slopes	345	0.1
YaA – Yahara fine sandy loam, 0 to 3 percent slopes	5,860	1.5

APPENDIX C

Prime and Other Important Farmlands in Jefferson County

Prime and Other Important Farmlands

Jefferson County, Wisconsin

Map symbol	Map unit name	Farmland classification
BpB	Boyer sandy loam, 1 to 6 percent slopes	All areas are prime farmland
DdB	Dodge silt loam, 2 to 6 percent slopes	All areas are prime farmland
FsA	Fox silt loam, 0 to 2 percent slopes	All areas are prime farmland
FsB	Fox silt loam, 2 to 6 percent slopes	All areas are prime farmland
GsB	Grays silt loam, 2 to 6 percent slopes	All areas are prime farmland
GtB	Grellton fine sandy loam, 2 to 6 percent slopes	All areas are prime farmland
GwB	Griswold sandy loam, 2 to 6 percent slopes	All areas are prime farmland
HeB	Hebron loam, 1 to 6 percent slopes	All areas are prime farmland
JuB	Juneau silt loam, 1 to 6 percent slopes	All areas are prime farmland
KdA	Kibbie fine sandy loam, 0 to 3 percent slopes	All areas are prime farmland
KeB	Kidder sandy loam, 2 to 6 percent slopes	All areas are prime farmland
KfB	Kidder loam, 2 to 6 percent slopes	All areas are prime farmland
KgB	Kidder loam, moderately well-drained, 2 to 6 percent slopes	All areas are prime farmland
MgA	Martinton silt loam, 0 to 2 percent slopes	All areas are prime farmland
MgB	Martinton silt loam, 2 to 6 percent slopes	All areas are prime farmland
MoB	Mayville silt loam, 2 to 6 percent slopes	All areas are prime farmland
MpB	McHenry silt loam, 2 to 6 percent slopes	All areas are prime farmland
RnB	Ringwood silt loam, 2 to 6 percent slopes	All areas are prime farmland
RtB	Rotamer loam, 2 to 6 percent slopes	All areas are prime farmland
SbA	St. Charles silt loam, moderately well-drained, 0 to 2 percent slopes	All areas are prime farmland
SbB	St. Charles silt loam, moderately well-drained, 2 to 6 percent slopes	All areas are prime farmland
SfB	St. Charles silt loam, moderately well-drained, gravelly substratum, 2 to 6 percent slopes	All areas are prime farmland
ShB	Salter loamy sand, 2 to 6 percent slopes	All areas are prime farmland
SkB	Saylesville silt loam, 2 to 6 percent slopes	All areas are prime farmland
SoB	Sisson fine sandy loam, 1 to 6 percent slopes	All areas are prime farmland
ThB	Theresa silt loam, 2 to 6 percent slopes	All areas are prime farmland
TuA	Tuscola silt loam, 0 to 2 percent slopes	All areas are prime farmland
TuB	Tuscola silt loam, 2 to 6 percent slopes	All areas are prime farmland
WxB	Whalan loam, 2 to 6 percent slopes	All areas are prime farmland
BoC	Boyer loamy sand, 6 to 12 percent slopes	Farmland of statewide importance
CaB2	Casco loam, 2 to 6 percent slopes, eroded	Farmland of statewide importance
FoC2	Fox loam, 6 to 12 percent slopes, eroded	Farmland of statewide importance
GwC2	Griswold sandy loam, 6 to 12 percent slopes, eroded	Farmland of statewide importance
KeC2	Kidder sandy loam, 6 to 12 percent slopes, eroded	Farmland of statewide importance
KfC2	Kidder loam, 6 to 12 percent slopes, eroded	Farmland of statewide importance
LyB	Lorenzo sandy loam, 2 to 6 percent slopes	Farmland of statewide importance
MpC2	McHenry silt loam, 6 to 12 percent slopes, eroded	Farmland of statewide importance
RtC2	Rotamer loam, 6 to 12 percent slopes, eroded	Farmland of statewide importance
SlC2	Saylesville silty clay loam, 6 to 12 percent slopes, eroded	Farmland of statewide importance
SoC2	Sisson fine sandy loam, 6 to 12 percent slopes, eroded	Farmland of statewide importance
ThC2	Theresa silt loam, 6 to 12 percent slopes, eroded	Farmland of statewide importance
WxC2	Whalan loam, 6 to 12 percent slopes, eroded	Farmland of statewide importance
AzA	Aztalan fine sandy loam, 0 to 3 percent slopes	Prime farmland if drained
BaA	Barry silt loam, 0 to 3 percent slopes	Prime farmland if drained
DcA	Del Rey silt loam, 0 to 3 percent slopes	Prime farmland if drained
Gd	Gilford sandy loam	Prime farmland if drained
Kb	Keowns silt loam	Prime farmland if drained
LaB	Lamartine silt loam, 2 to 6 percent slopes	Prime farmland if drained
MmA	Matherton silt loam, 0 to 3 percent slopes	Prime farmland if drained
MnA	Matherton silt loam, clayey substratum, 0 to 3 percent slopes	Prime farmland if drained

Appendix D

Working Lands Initiative Checklist

Jefferson County Land and Water Conservation Department
WLI Farmland Preservation Compliance Checklist

Location: T ____ N R ____ E Section _____

Phone Number: _____

Date Checked _____ Staff Initials _____

Conservation Compliance Standard	Yes	No	Notes
Sheet, Rill and Wind Erosion			
1. Cropland soil erosion meets tolerable soil loss			
Manure Storage Facilities			
2. Is there a manure storage facility on the farm? (If no, skip to 8)			
3. Was the manure storage facility constructed after 10/2002?			
Does the facility meet NRCS Standards?			
4. Has an existing storage structure (built prior to 10/2002) been substantially altered?			
Does the altered structure meet NRCS Standards?			
5. Is there an unused manure storage structure on the farm?			
Has the manure storage facility been abandoned according to NRCS Standards?			
6. Is there a manure storage structure on the farm that has not had manure added or removed for a period of 24 months or more?			
7. Does a manure storage structure pose an imminent threat to public health, fish and aquatic life or is causing a violation of groundwater standards?			
Clean Water Diversions			
8. Has runoff been diverted away from contacting feedlot, manure storage areas and barnyard areas within water quality management areas (WQMA)?			
Nutrient Management			
9. Is there a nutrient management plan on all cropland for the application of manure and commercial fertilizer that meets the NRCS 590 Standard?			
Manure Management Prohibitions			
10. Is there any overflow of manure storage structures?			
11. Are there any unconfined manure stacks in a WQMA?			
12. Is there direct runoff from a feedlot or stored manure into waters of the state?			
13. Is there unlimited access by livestock to waters of the state in a location where high concentrations of animals prevent the maintenance of adequate sod or self-sustaining vegetative cover?			

Note: Red shaded boxes indicate non-compliance

Supplemental Farm Information

Tax Parcel ID	Acreage

Notes:

_____
_____
_____
_____
_____
_____
_____
_____
_____
_____

Final Compliance Status

☐ Compliance ☐ Non-Compliance

_____ _____

LWCD Staff Date

Definitions

Adequate Sod or Self-sustaining Vegetative Cover: The maintenance of sufficient vegetation so that the physical integrity of a stream bank or lakeshore is preserved. Self-sustaining vegetative cover includes grasses, forbs, and sedges.

Direct Runoff: A discharge of a significant amount of pollutants to waters of the state resulting from any of the following:

1. Runoff from a manure facility
2. Runoff from an animal lot that can be predicted to reach surface water of the state through a defined or channelized flow path or a man-made conveyance
3. Discharge of leachate from a manure pile
4. Seepage from a manure storage facility
5. Construction of a manure storage facility in permeable soils or over fractured bedrock without a liner designed in accordance with NR 154.04 (3)

NRCS Standards for Manure Storage: Refers to NRCS 313 Standard for construction of manure storage facilities.

Unconfined Manure Stack: A quantity of manure that is at least 175 cubic feet in volume which covers the ground surface to a depth of at least 2 inches and is not confined within a manure storage facility. For example, a typical 140 bushel manure spreader contains about 175 cubic feet of manure.

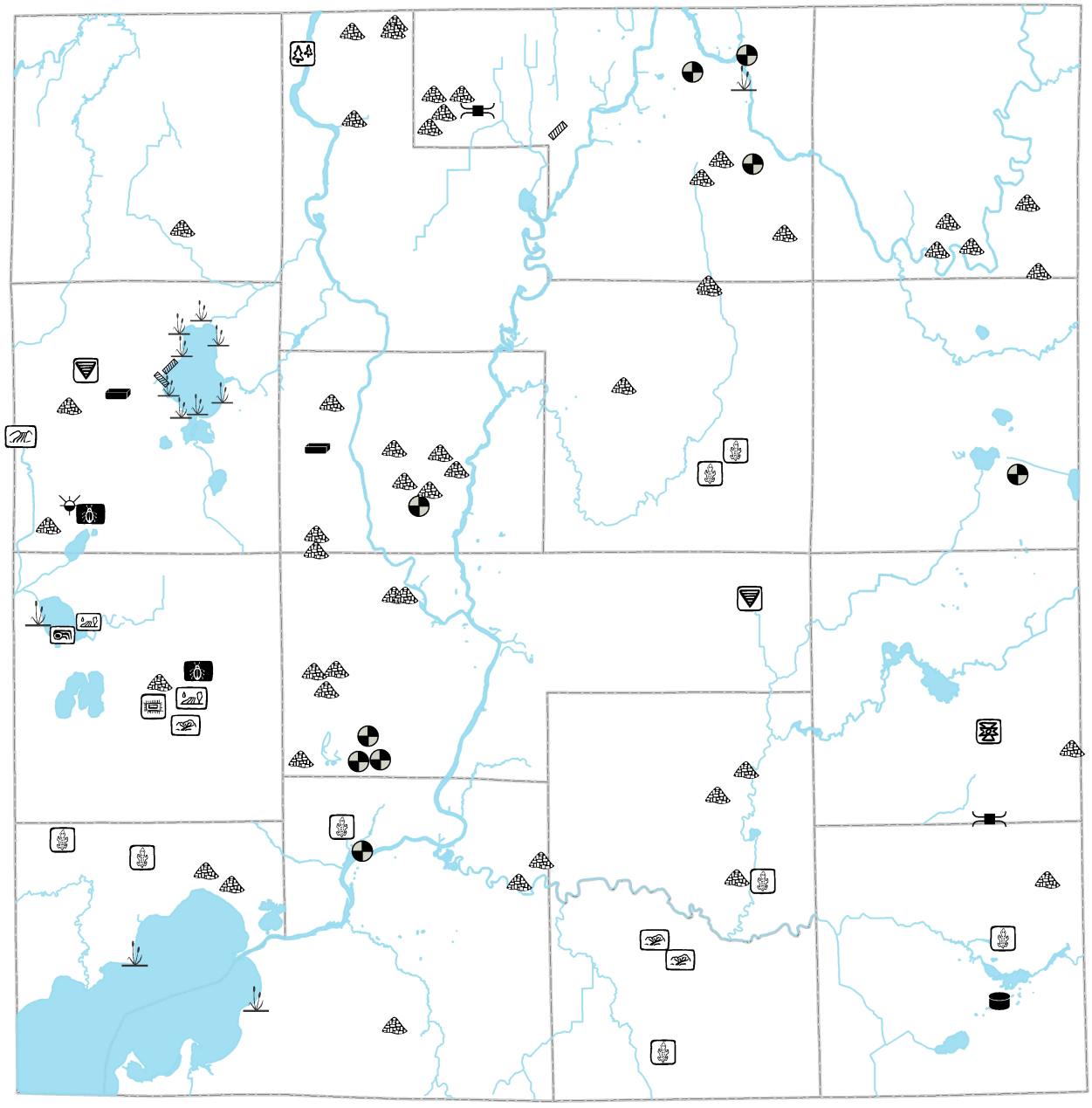
Water Quality Management Area (WQMA): The area within 1,000 feet from the ordinary high water mark of navigable waters of a lake pond or flowage; the area within 300 feet from the ordinary high water mark of navigable waters of a river or stream; a site that is susceptible to groundwater contamination or that has the potential to be a diet conduit for contamination to reach groundwater. A site susceptible to groundwater contamination means the following:

1. An area within 250 feet of a private well
2. An area within 100 feet of a municipal well
3. An area within 300 feet upslope or 100 feet down slope of karst features
4. A channel with a cross-sectional area equal to or greater than 3 square feet that flows to a karst feature
5. An area where the soil depth to groundwater or bedrock is less than 2 feet
6. An area where the soil above groundwater or bedrock does not exhibit one of the following:
    - At least a 2 foot soil layer with 40% fines or greater
    - At least a 3 foot soil layer with 20% fines or greater
    - At least a 5 foot soil layer with 10% fines or greater

Waters of the State: All lakes, bays, rivers, streams, springs, ponds, wells, impounding reservoirs, marshes, water courses, drainage systems or other surface water or ground water, natural or artificial, public or private within the state or under its jurisdiction except those waters that are entirely confined and retained completely upon the property of a person.

Maps

Map 1
Cost Shared Projects 2006-2010



- Cover/Green Manure Crop
- Critical area Stabilization
- Diversion
- Field Windbreak
- Livestock Fencing
- Manure Storage Closure
- Manure Storage System
- Nutrient Management
- Pesticide Management
- Residue Management
- Riparian Buffer
- Shoreline Restoration
- Streambank/Shoreline Protection
- Underground Outlet
- Water & Sediment Control Basin
- Waterway System
- Well Decomissioning
- Wetland Restoration

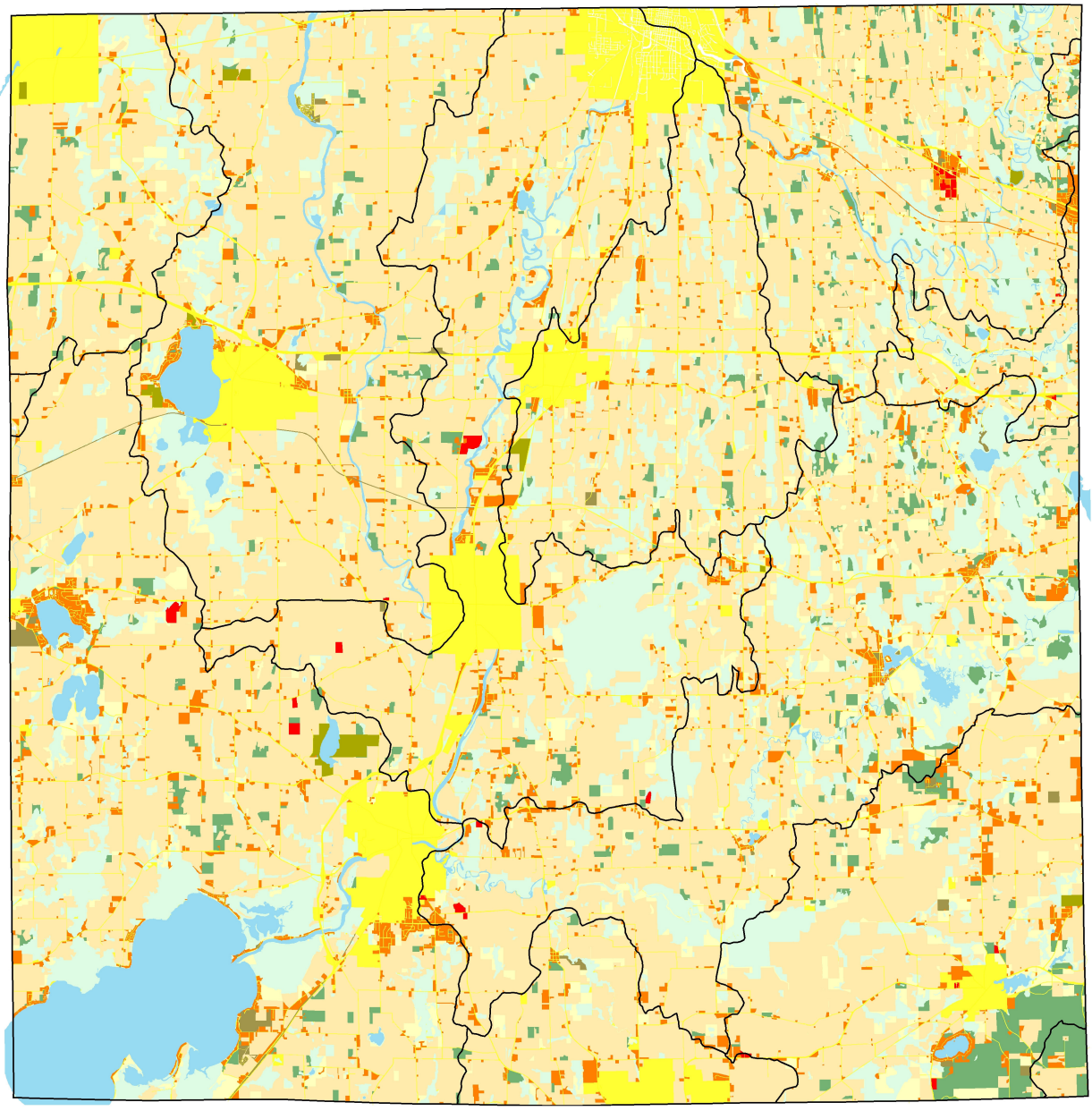
1 0.5 0 1 2 3 4 5
Miles

Compiled by Jefferson County Land & Water Conservation Department, June 2010

Data Sources: Jefferson LWCD Costshare Database

Map 2

2005 Land Use Inventory



Land Use Description

Agricultural	Rural Developed	Surface Water
Rural Open	Urban/Roadways	Wetlands
Recreational Lands	Commercial	Woodlands

Major Watershed Boundaries

1 0.5 0 1 2 3 4 5

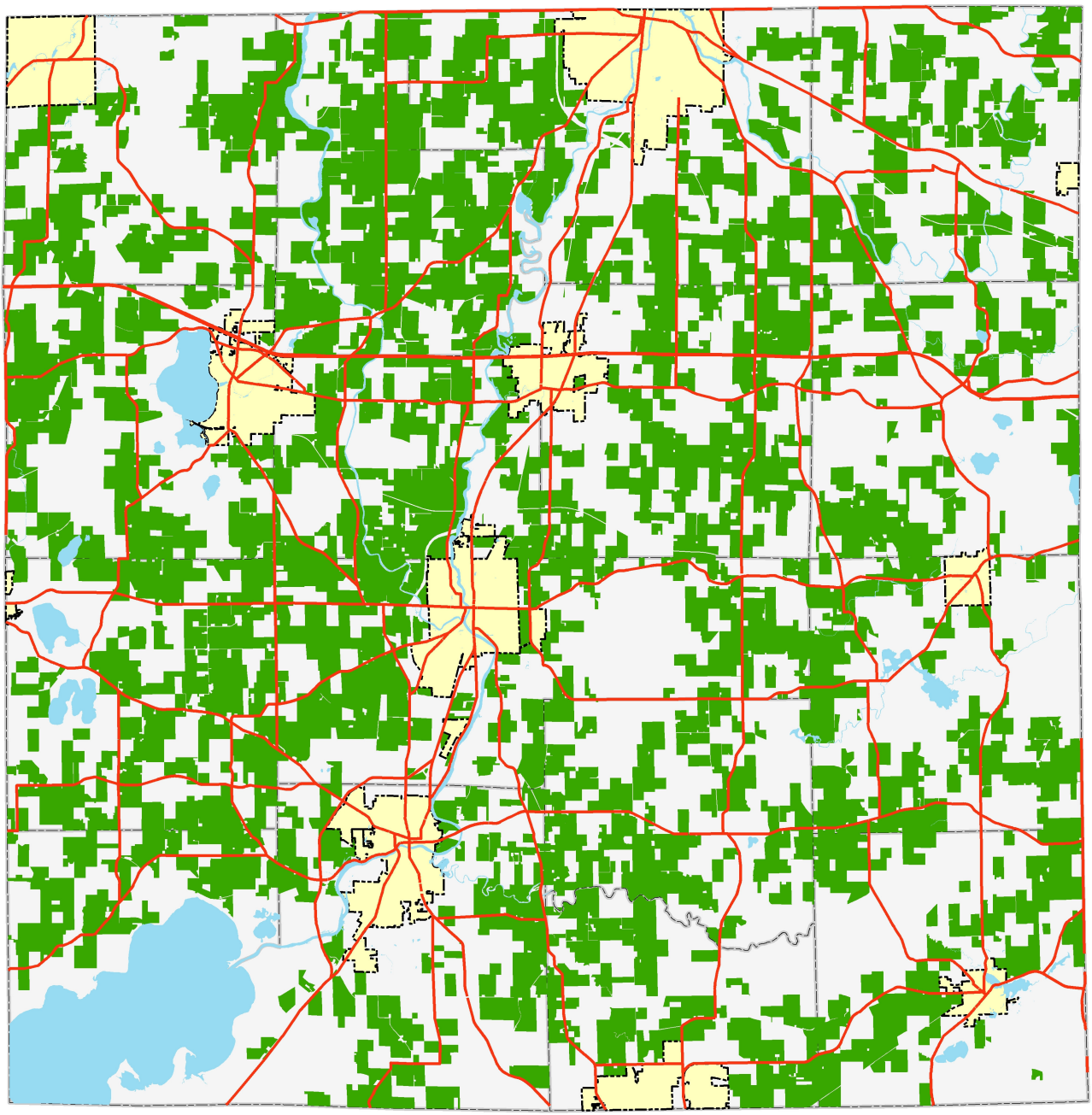
Miles

Disclaimer: The accuracy of this document is limited to the quality of the records from which it was assembled. Other inherent inaccuracies occur during the compilation process. Jefferson County makes no warranty whatsoever concerning this information.

Compiled by the Jefferson County Land & Water Conservation Department

Data Sources:
2005 Jefferson County Land Use Inventory, Jefferson Land Information Office

Map 3
Farmland Preservation Program
Tax Year 2008



FPP Participants
Surface Water
Major Roadways
Townships
City or Village

1 0.5 0 1 2 3 4 5
Miles

Disclaimer: The accuracy of this document is limited to the quality of the records from which it was assembled. Other inherent inaccuracies occur during the compilation process. Jefferson County makes no warranty whatsoever concerning this information.

Data compiled by the Jefferson County Land & Water Department Summer and Fall 2004

Data Sources:
FPP Database, Jefferson County LWCD
Jefferson County Parcel Data,
Jefferson Land Information Office

Map 4
Environmental Corridors

Environmental Corridors
Lakes & Ponds
Major Watersheds
Rivers & Streams
Townships

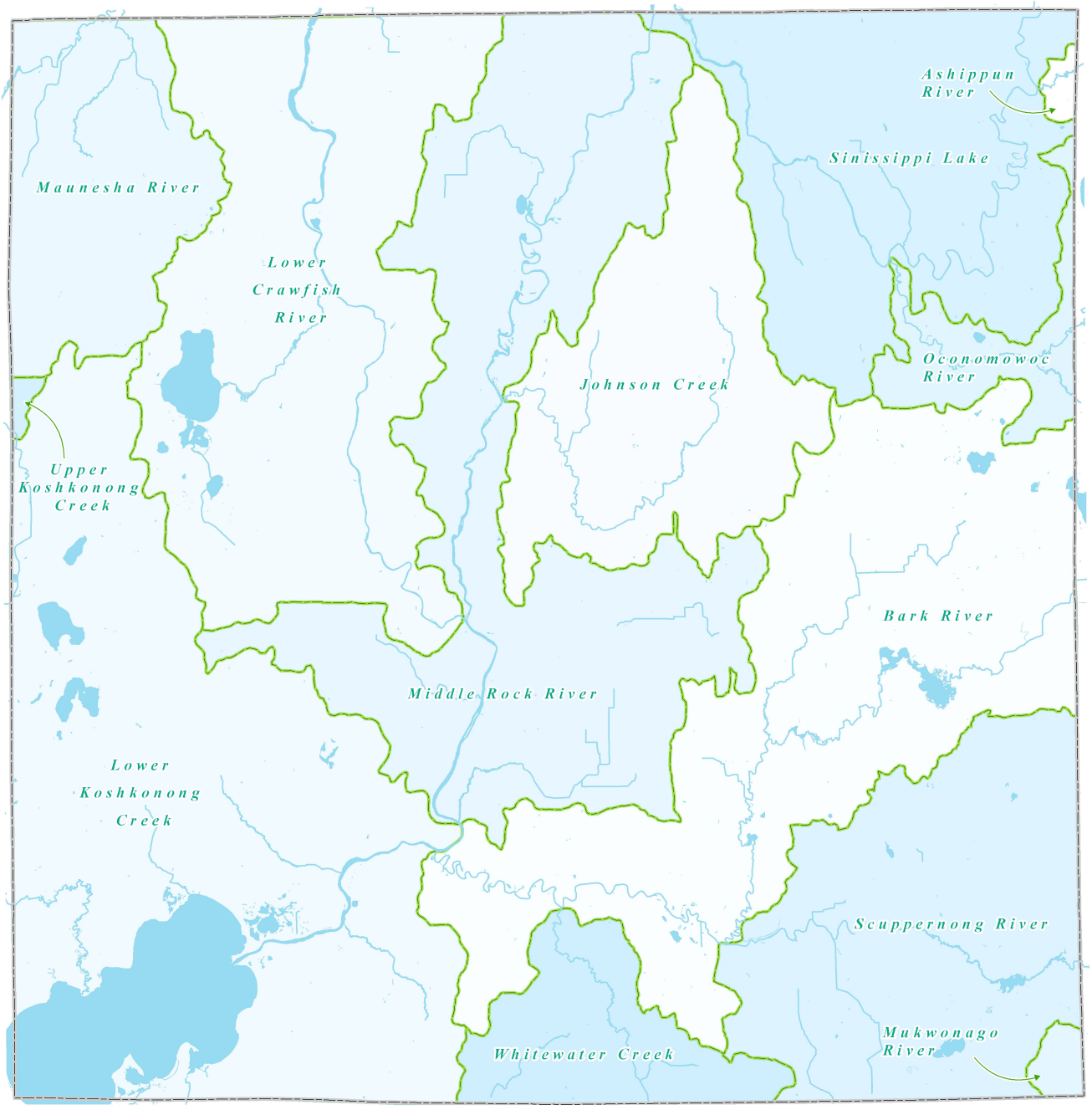
1 0.5 0 1 2 3 4 5
Miles

Disclaimer: The accuracy of this document is limited to the quality of the records from which it was assembled. Other inherent inaccuracies occur during the compilation process. Jefferson County makes no warranty whatsoever concerning this information.

Compiled by the Jefferson County Land & Water Conservation Department

Data Sources:
2009 Jefferson County Environmental Corridors,
Jefferson Land Information Office
This data includes 2009 Floodplain Analysis

Map 5
River Watersheds



River Watersheds

Lakes & Ponds Rivers & Streams

1 0.5 0 1 2 3 4 5
Miles

Disclaimer: The accuracy of this document is limited to the quality of the records from which it was assembled. Other inherent inaccuracies occur during the compilation process. Jefferson County makes no warranty whatsoever concerning this information.

Compiled by the Jefferson County Land & Water Conservation Department

Data Sources:
WiDNR Watershed Management Units
WiDNR 24k Hydro Dataset ver. 6.0

Map 6
Lake Watersheds

* The entire outlined area is the Lake Koshkonong Watershed.
* The Haumerson Pond watershed included the watersheds for Rome Pond, Cushman Pond, Upperspring Lake, Lower Spring Lake, Blue Spring Lake, Mud Lake (Concord), Golden Lake, Mud Lake (Sullivan), and Goose Lake

Lake Watersheds | Jefferson County | County Boundaries

5 2.5 0 5 10 15
Miles

Compiled by the Jefferson County Land & Water Conservation Department

Data Sources:
MSA GIS Services 2002, Jefferson County
Lake Watershed Delination
WiDNR Watershed Dataset
WiDNR State Counties Dataset

Map 7
Lake Watersheds

Lake Watersheds	Surface Water	Townships

1 0.5 0 1 2 3 4 5

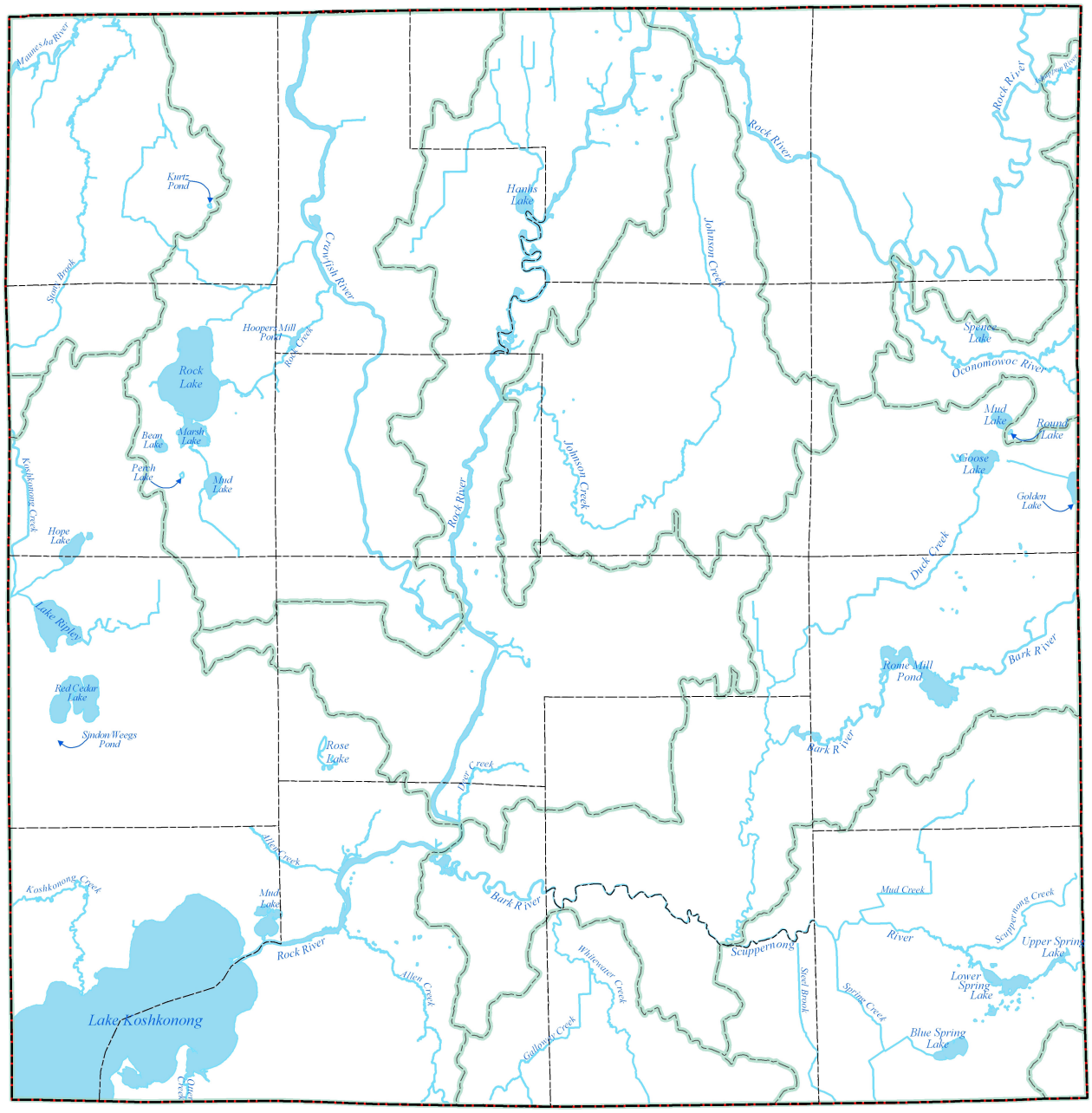
Miles

Disclaimer: The accuracy of this document is limited to the quality of the records from which it was assembled. Other inherent inaccuracies occur during the compilation process. Jefferson County makes no warranty whatsoever concerning this information.

Compiled by the Jefferson County Land & Water Conservation Department

Data Sources:
MSA GIS Services 2002, Jefferson County
Lake Watershed Delination
WiDNR Watershed Dataset
WiDNR 24k Hydro Dataset v.6.0

Map 8
Water Resources



Major Watersheds | Lakes & Ponds | River & Streams

Townships

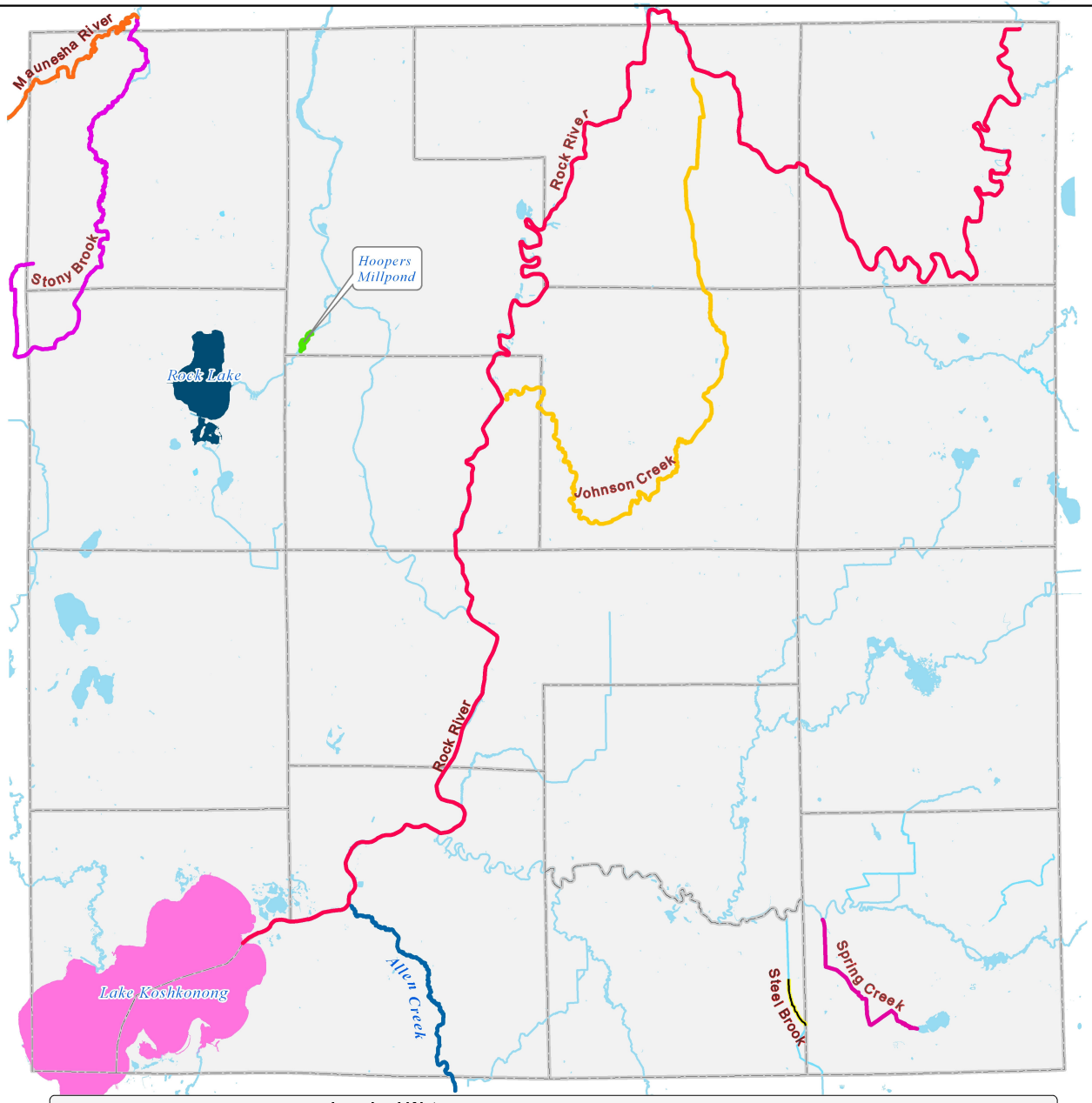
1 0.5 0 1 2 3 4 5
Miles

Disclaimer: The accuracy of this document is limited to the quality of the records from which it was assembled. Other inherent inaccuracies occur during the compilation process. Jefferson County makes no warranty whatsoever concerning this information.

Compiled by the Jefferson County Land & Water Conservation Department

Data Sources:
WiDNR Watershed Dataset
WiDNR 24k Hydro Dataset v.6.0

Map 9
Impaired and Exceptional Waters



Exceptional Stream

- Allen Creek

Impaired Waters

Local Name, Pollutant	Local Name, Pollutant
Johnson Creek, Sediment	Hoopers Millpond, PCBs
Maunesha River, Sediment & Total Phosphorus	Lake Koshkonong, Sediment & Total Phosphorus
Rock River, Sediment & Total Phosphorus	Rock Lake, Mercury
Spring Creek, Sediment & Total Phosphorus	
Stony Brook, Sediment	
Steel Brook, Sediment & Total Phosphorus	

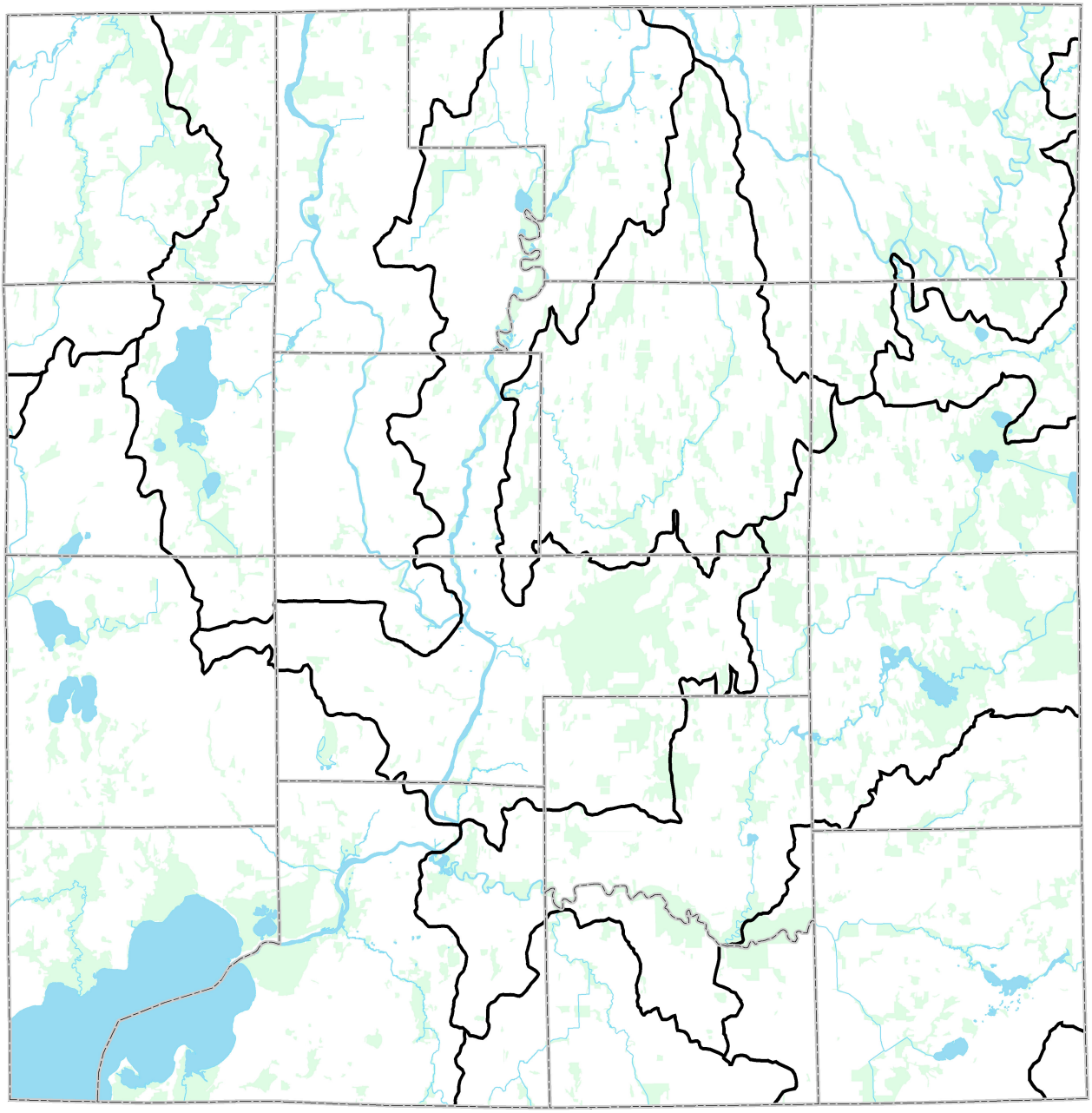
1 0.5 0 1 2 3 4 5
Miles

Compiled by the Jefferson County Land & Water Conservation Department

Data Sources: Wisconsin 303d, Impaired & Exceptional Waterways Database 2010 http://dnr.wi.gov/org/water/wm/wqs/303d/303d.html

Map 10

DNR Designated Wetlands



Disclaimer: The accuracy of this document is limited to the quality of the records from which it was assembled. Other inherent inaccuracies occur during the compilation process. Jefferson County makes no warranty whatsoever concerning this information.

Compiled by the Jefferson County Land & Water Conservation Department

Data Sources: Wisconsin DNR 24K Hydro Dataset & Wetland Inventory